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Photograph by Bert Huntoon

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Photograph by Thomas O. Scheckell

The Storm Curtain

"Lombardys, patient in the summer rain,
Gaze out across the mist-veiled plain,
Like journeying friars who pause to pray
For wanderers who pass that way.
Their murmured benediction dies,
Under the slowly darkening skies,
To echo in a low refrain
As the storm curtains close again.

—JOHN PHELPS.

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THE AMERICAN FORESTRY ASSOCIATION
"Beautiful Photographs of Trees in America"

AMERICAN FORESTS

Vol. 41 FEBRUARY, 1935 No. 2

OUR ATTITUDE TOWARD LAND

A Contrast Between American and European Land Policy

By ROBERT B. GOODMAN

ON OUR land resources—forests, streams, minerals and soil fertility—has the destiny of the American people fed and grown for three centuries. These rich resources made it possible for us to become the greatest of all Western nations, not only in land area, but also in wealth, population, literacy and democracy. From them our American genius created the complex of physical well-being, cultural development and occupational opportunity we term "the American standard of living."

Now the long era of conquest and colonization has definitely closed. Our once expanding frontiers are drawing in. The traditional assumption of inexhaustible natural resources is becoming dimmed by the shadows of a progressing exhaustion. Our population which increased continuously at a faster rate than that of any other Western nation is now approaching the end of its long growth. Out of the many confusing aspects of the present depression, it has become evident that our near stationary population is unwisely distributed, and to a large extent, impermanently located. Years of agricultural distress disclose many efforts at land utilization that are disastrous to the individuals concerned and to the rural communities of which they are a part. The growing aridity of the West is forcing our attention to the dangers of uncontrolled farm cropping and grazing.

Our rapid expansion of industry has brought an overdensity of population in urban centers, which has long been the concern of city planning. The accompanying rise of large-unit, industrialized farming is draining the regions unadaptable to this modernization, leaving a residue of isolated rural settlement that is still more socially deplorable. Between these two extremes in population density there is unstable equilibrium. Renting and sharing are on the increase; farmer-ownership is declining.

In the field of continuing use and enjoyment of land resources, Europe can speak most convincingly. This view of the countryside near Gerkau, Czechoslovakia, pictures vividly widespread accomplishment in balanced land use and is in striking contrast to American scenes of misplaced populations, resource depletion and regional pauperization.

Cyclic changes in the barometer of industrial employment result in a restless and costly flux and flow of urban and non-urban population.

It is generally assumed that the agricultural depression will end with the general revival of industry and business and the accompanying stimulation of domestic and foreign demand for food and fiber; but the situation of the small farmer appears to be almost permanently hopeless. He is without facilities or knowledge necessary to adjust his production to effective demand. He is suffering alternately from a surplus or a famine. His production methods are inefficient and he is laboring under a distribution system which makes the products of the widely scattered small farmstead dear to the consumer, yet below cost to the producer. He is becoming more dependent on part time employment in industry or service. Nevertheless, in a well planned distribution of population on land, there should be a legitimate place for a large number of successful small farms.

Much has been said, with little prospect of adjustment, concerning our archaic pattern of local government. This pattern was designed on the assumption of continually expanding frontiers and there was little or no provision made for its revision in areas of exhausted soil and declining population. To maintain essential governmental functions in these sparsely populated and impoverished counties and towns creates governmental costs largely in excess of the local tax resources. Property taxes are frequently so high that there is widespread abandonment of land ownership through tax delinquency. Owners of natural resources are forced to destroy their forests and exhaust their minerals without profit in order to escape the slow confiscation of the local property tax. This further diminishes the tax base. To remedy this situation there have developed unreasoned systems of state and fedral aids which maintain these inefficient local units at the expense of more prosperous regions.

There is an increasing domain which is becoming submarginal to any profitable use. Millions of acres of once productive and protective forest have been cut over, burned over and left barren. Millions of acres of grazing land have succumbed to the gradual destruction of protective cover through the unregulated over-grazing of the unappropriated public domain of the West. Sheet and gully erosion produced by exploitative agriculture are progressively destroying additional millions of acres of once rich arable land near the eastern centers of population. In the West millions of acres of land irrigated from wells have already been, or will shortly be, abandoned because of the subsidence of ground water levels. In many regions fertile soils are being buried by wind-borne sand and flood-borne gravel deposits. The shadow of land devastation spreads over more than one-third of our continental acreage, and we are now beginning to realize that there is no place in our national economy for devastated land.

These are defects of our traditional land policy that loom large in long time planning. They are presented in the dispassionate literature of the Census Bureau, the Geological Survey, the Division of Agricultural Economics, and most recently in the report of President Roosevelt's National Resources Board. They are discussed locally and piece-meal at meetings of farmers, foresters and men of business. Not one count is in controversy. The issue is clear. Going as we are in the unrestricted, unregulated, uncoordinated use of our land resources, we are squandering our rich inheritance and leaving an impoverished land to our descendants.

The public complacence or apathy under which this situation has been permitted to come about, reflects the disregard for land characteristic of a nation that has always possessed more land that its people could use. This disregard may be described as an attitude of undue emphasis on the rights of land ownership and a lack of emphasis on the obligations inherent in such ownership. It may be helpful for us, therefore, to examine the land attitude of those other Western nations which do not possess as much land as their population needs, that is, the densely populated countries of central Europe. Here we find, in tradition, in legislation, and in unwritten law, an acceptance of definite obligation between the owners of land (public or private) and society.

Dependence on land is a continuity. Only to the extent that its land was used wisely by the preceding generation, may the present community sustain itself upon this land's productive capacity; and only to the extent that the present community uses land wisely will it be able to pass to its descendants the heritage it received from its fathers. In these European countries this continuity of obligation is an age-old social consciousness. Maintaining land productivity while harvesting only the annual increment has become both the obligation and the justification of land ownership. By one means or another organized society will take title from the owners who fail in the faithful performance of this obligation. The land owner's security in his title lies in his intelligent recognition and effective performance of this obligation.

In making a comparison between the effects of this European attitude and the effects of our own traditional disregard of ownership responsibility, we must disabuse ourselves of the once too prevalent American viewpoint that we are younger and more modern than the rest of the world and more nearly free of long outworn traditions. Except as geographical names, nearly all of the European countries are younger, newer, and not less amenable to progress, than our own century and a half old United States. From Prague in Czechoslovakia to Portland, Oregon, Western culture comes from a common ancestry, is endowed with similar faculties, and exhibits the same confusion of political, economic and social systems. Within this region the discernible distinctions in temperament are from North to South—not from East to West.

There is everywhere a tendency toward provincialism by which most of us are accustomed to orient ourselves. For instance, we Americans are prone to over-emphasize the importance of the physical and mechanical. Because of our greater distances, we have developed a more efficient telephone system, but this is not an indication that the conservations transmitted are any more memorable.

I have mentioned four general aspects of our American land situation: maladjustment of population, unprofitable small farming, regional pauperization, and resource depletion. These are an indictment of our traditional attitude toward land. In each of these aspects we find a significant contrast with the corresponding aspects of land utilization in the countries of central and western Europe.

Even in the largest and most densely populated European cities, the love for land has entered into the natural city plan. This is today reflected in the semi-detached villa of the English city and the still more recent development of multiple apartment blocks centered in wide garden plots in continental European city planning. In the country also, out of ancient considerations of mutual safety, one finds an orderly grouping of communities instead of isolated farmsteads. The factory was not as with us a *de novo* enterprise, calling for urban concentration, but instead a slow transition from handicraft to machine craft, resulting in a stepping up of production with no

change in the numbers employed. Industrial activity, therefore, has not caused urban migration; nor has industrial depression caused the counter movement that we have experienced in the United States. In these European countries there is a continuity of residence, the people are rooted to the soil. We find less concern as to highway construction or facilities of communication and more concern as to land improvement and localized developments. With frontiers, centuries closed, the distribution of capital expenditures is vertical instead of horizontal.

In Western Europe there is not land enough to permit inefficient systems of production and marketing by the small farmer. Because of this there have developed systems of cooperatives, regional and national, of which Denmark is an outstanding example. These enterprises are concerned not alone with marketing agreements, but cover the whole field of effective utilization, standardized methods and products, adjustments of supply and demand, price protection, and an aggressive sales promotion. Recently at the Crystal Palace in London was one of the frequent conferences of delegates of these cooperatives, representing some twenty-five European countries. These cooperatives are a development of self-governed agriculture comparable to our own undertakings in self-government of industry.

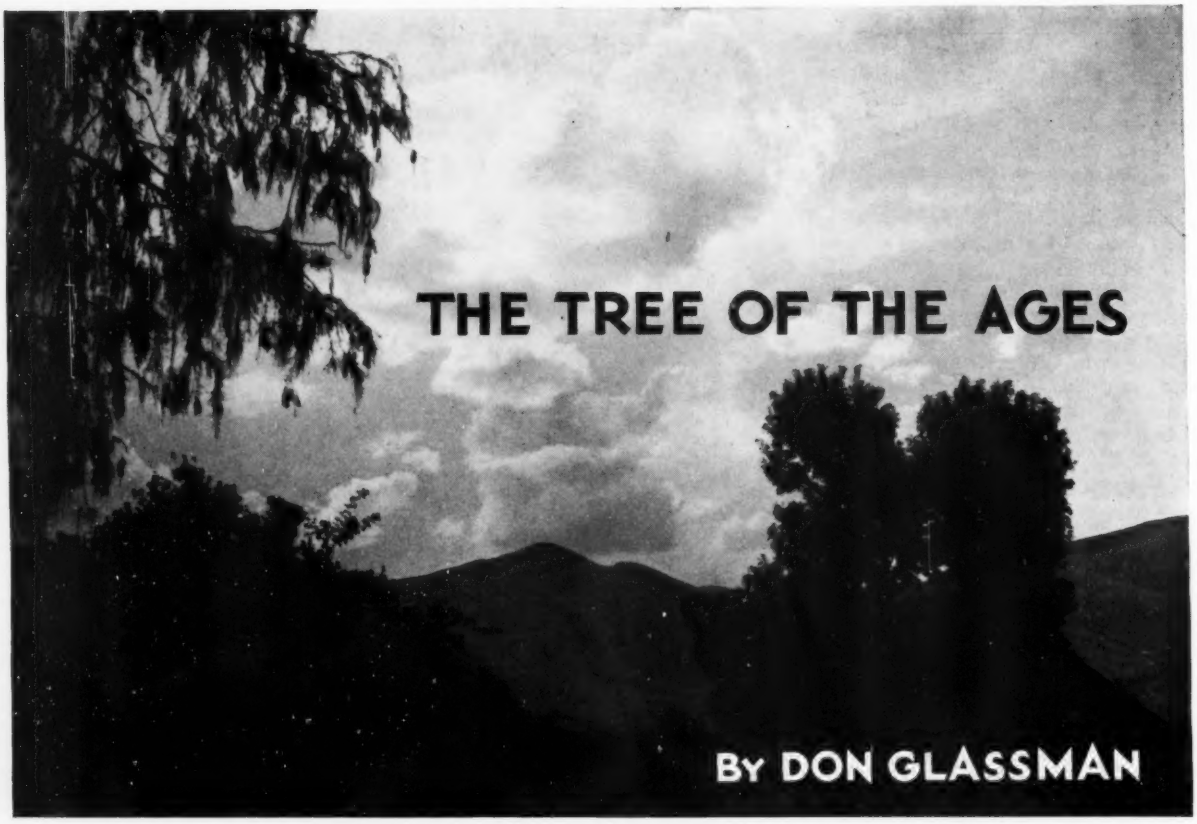
Europe's handicap in economic land use is its division into many small nations, each with its Chinese wall of military and economic defense. This situation greatly accentuates regional competition and conflict; but even in this there is an element of advantage. Its ultimate effect is to compel a planning for regional self-sufficiency, which is in strong contrast with the insufficiency of many submarginal regions of subsidized local government within the United States.

It is in the field of continuing use and enjoyment of land resources that Europe can speak most convincingly to us. However much our attempts at a planned use of land may be based upon carefully considered

(*Continuing on page* 96)

Photographs by John Watzek

Scenes from three well-managed private forests in western Europe. (1) The property of Prince Hohenlohe-Langenburg in Czechoslovakia, devoted largely to the growing of spruce. (2) Strip cutting and natural regeneration in the forest of Count Czernin, Bohemia. (3) Utilization of poles and pulpwood in the famous Schaffgotsch Forest, Silesia, which has been under sustained yield management for over 800 years.



THE TREE OF THE AGES

BY DON GLASSMAN

The San Filipe mountain range, rising in the distance, completes a setting for El Arbole del Tule—oldest tree in the world.

THREE, five or ten thousand years ago the seed of a cypress rooted in the ground at Oaxaca, Mexico, where the village of Santa María del Tule now stands, and grew into a colossus of the floral kingdom.

El Arbole del Tule is a historical legend and a cold fact. It lives and breathes, but only the Lord knows whether it multiplies. All living things have a given span of life, but El Tule has outlived every span, has survived civilizations, conquests, revolutions, cataclysms, and who knows? it may go on living its sinless, harmless life forever and anon.

This robust child of nature lives within a fenced enclosure and beside a deserted Catholic Church colored in bright red, white and blue. The San Felipe range of mountains rise up in the distance and complete a setting that is unforgettable.

El Tule has acquired a profusion of other names besides the official one of El Arbole del Tule. It is the Big Vegetable, the Colossus Vegetatus, the sabino, the Montezuma cypress, El Arbol Excelso, and a half dozen scientific names besides, the most accurate being *Taxodium mucronatum*. But the most musical name of all is the Aztec word ahuehuete, pronounced ah-wē-wē-tē, meaning "tree of water."

This colossal tree is a museum piece among all the flora of the earth. Its health is perfect, and if anything is wrong, it is nothing more than an extraordinary pituitary gland, whose work has been such that once a poet cried,

"I beg of you, do not continue growing—
Perhaps the earth will be too small for you!"

Following the sinuosities of El Tule's gigantic trunk, one measures its perimeter as 108 feet at a height of five feet above the ground. So far as is known, no organism ever attained such a vast girth. But El Tule's girth is out of all proportion to its height of 141 feet which is surpassed by trees in more temperate climates.

The outline of El Tule's canopy is plump and quite spherical. It throws a ground shadow with an area of 7,200 square feet when the sun is at its zenith, enough for a small army to shelter beneath its spreading branches. Indeed, it is rumored that none other than Hernan Cortes and his army camped there, on the march to Honduras.

One of the great mysteries surrounding El Tule is its fecundity. A Mexican botanist, Professor C. Conzatti, attempted to reproduce trees from the giant's seeds, but despite all care and precaution, he never succeeded. Young trees of the same species are rare, even in the vicinity of Tule. But in the same churchyard, there is another ahuehuete whose circumference is about seventy feet. There is, however, no direct proof that this little giant, called El Hijo, the son, is an offspring of El Tule. And not many yards away, is still another little giant which the natives call El Nieto, the grandson, but its paternity is likewise obscure.

In contrast with the poor success of Mexican botanists in artificial germination, Henry Teuscher, dendrologist of the New York Botanical Garden, states that he had several small ahuehuetes growing in the environs of New York City until the severe frost of last winter killed them off.

The theory that El Tule cannot reproduce because it is senile is still untested. The natives of Santa María del Tule aver that at least once a year, after the heavy spring rains, the seeds of El Tule take root in its very shadow and send up tiny stems which are subsequently parched and killed by the advancing dry season.

A few hardy travelers go out of their way to see El Arbole del Tule. So little is known, scientifically and historically, about it that the seeker of information encounters difficulty in learning even the elementary facts. Guide books forget El Tule entirely, or dismiss it with a line, and even the natives of nearby towns have imperfect information.

But why is it important to know about Tule? One can recite a dozen of its distinctions, but perhaps preëminent among them all is age. By every known criterion and by a general consensus among botanists and archeologists, El Tule is the oldest living thing on the earth. It has been compared with all the other wonders of the plant kingdom and has invariably surpassed them on one point—age. Yet nobody knows the precise age of El Tule, notwithstanding that on the average of once a year somebody announces a new figure. But if you were to average all the scientific estimates, El Tule would still hold the distinction of being the oldest living organism.

El Tule's many distinctions fall into two groups: One group is of a scientific nature; the other group concerns human beings, that is, the historical, legendary, religious, and literary associations. Botanically, El Tule is there to speak for itself. But as regards human associations, there is little to depend on. Dozens of poems and reams of prose have been written about this ahuehuete—they are a matter of record. But the historical rôle of the tree is obscure. And there is more than mere suspicion for believing that El Tule was important in the human history of the region now known as Oaxaca.

To this very day, El Tule is an object of profound veneration among the Indians. Twice a year, at Easter and at Christmas, they make pilgrimages to the site, where they hold a fiesta with appropriate music and dancing. Several centuries ago, the Catholic priests realized the power of this veneration and declared El Tule the property of their faith. They founded an outpost of Christianity, erected a Church in the shadow of El Tule, and sanctified the ground with holy devotions. And the Indian dances around El Tule were appropriated into the church ritual.

But El Tule was venerated and worshipped long before the advent of Catholic missionaries, and it was this extreme devotion which prevented vandals from destroying the tree and using it for firewood. Even petty vandalism, which would have robbed El Tule of its bark and branches, is unknown. It is dangerous for anybody even to cut his initials into the bark—that would be tantamount to carving them on the statue of a god.

This brings one to a consideration of El Tule's place as a deity. Among the Indian tribes of Oaxaca, as with many primitive people, tree worship is one of the bases of religion. It is a primitive instinct to endow the sun with fatherhood and the earth with motherhood, and to believe that the union of sun and earth has given birth to trees. As the offspring of the gods, trees were considered god-like and were worshipped with appropriate reverence. Such worship has persisted in Mexico down to this very day, despite the fact

The spreading glory of the Cypress del Tule—colossus of the floral kingdom. Surviving civilizations, conquests, revolutions—it has outlived every span. It is the concensus among botanists and archeologists that El Tule, as the tree is generally known, is the oldest living thing on the earth.

that many of the most sacred trees stand beside Churches of the Catholic faith.

The fifteen tribes which inhabited the province of Oaxaca at the time of the Conquest believed that they were either born of or descended from trees. One tribe, the Mixtecs, actually had preserved the two trees which represented for them the male and female elements of production. These trees, one a pine and the other a willow, did not survive after the coming of the Spaniards. In their zeal to establish Christianity, the conquistadores felled these pagan symbols. But the invaders could not exterminate a belief as easily as they could chop down a few trees. Secret houses of worship were maintained in caves, the entrances to which were uniformly guarded by two trees, one at each side. Fortunately, El Tule was saved from the fanatical evangelism of the Spaniards. To the Zapotec tribe, El Tule was one of the chief objects of daily devotion; they considered the tree as female in its symbolism. Prayers and obeisances under the green canopy were preliminary to final rites at Mitla, after which one's soul was considered purified.

The state of Oaxaca holds high rank as an archeological site in the New World. Hard by, within the radius of an hour's ride, one can reach such ruins as Mitla and Monte Alban. The former is the site of magnificent frescoes and sculptures and the grave of Zapotecan kings. Of the latter, Monte Alban, the world has heard much lately. It is the King Tut's tomb of the New World, having yielded a collection of gold masks and jewelry which vie with similar collections from other prehistoric tombs. Withal, only the surface of Oaxaca has been scratched. Less than five per cent of the possible exploration and excavation has thus far been carried out at Monte Alban. Thus the ruins of some magnificent civilizations are within a stone's throw of El Tule, which is not without significance. The mounds at Monte Alban, which the Indians are said to have covered at the approach of the Spaniards, are still to be stripped and exposed.

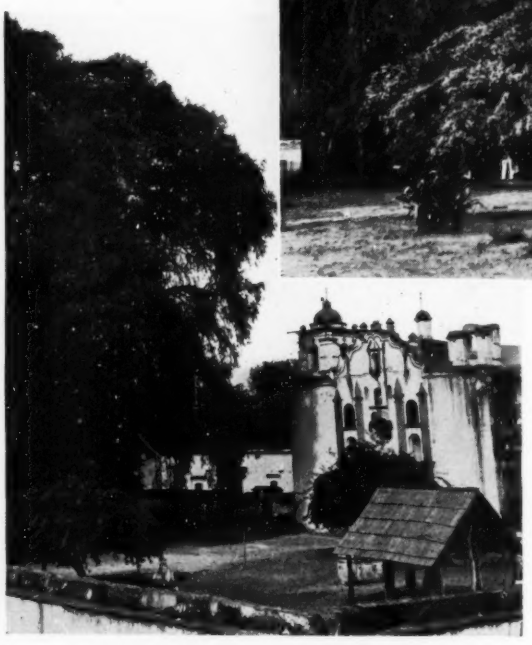
The proximity of El Tule to such remarkable ruins as Mitla and Monte Alban argues that the giant tree did not go unnoticed among those ancient people. El Tule was on the general line of transit between Monte Alban and Mitla. And it is alleged, but not proved, that the great Von Humboldt came to Santa Maria del Tule and paused long enough to compose and carve words on a wooden tablet which has since practically disappeared under the bark of the gigantus.

The above presupposes, of course, that El Tule has been of a size to command attention for at least 500 years; if we examine the records of its most recent growth, there is no reason to doubt that supposition. However, the determination of its age is still a matter for controversy, and no fewer than half a dozen schools of thought have contributed to the study. At first thought, one might imagine that El Tule's age would be a simple matter for modern science, since it is comparatively easy to determine the age of our giant redwoods and Douglas firs by counting the annual rings. But the ring count on a tropical tree is another matter. The seasons, the alternation of wet and dry spells, and the general climate confuse the record. In a warm, humid region, trees grow with such spurting vigor that they have been known to complete a ring cycle within one month.

So what would be gained if a horizontal core of the tree were extracted for the purpose of counting rings? The record would be most misleading because in calculating the age of El Tule one deals with a period of time that is almost geological in extent. There are no records to sustain an assumption that two thousand years ago this region had the same weather that it has now. Climate is always in evolution, and it would not be impossible to have two rings for one year and a dozen for another.

Long ago someone conceived the idea of comparing the growth of El Tule with other trees of the same species. This, too, was unproductive, for one cannot establish a ratio between the diameters of a (*Continuing on page* 95)

A close-up which shows the magnificent spreading branches of El Tule.



Within a fenced enclosure and beside a deserted Catholic Church colored in bright red, white and blue lives this robust child of nature — the great Cypress of Mexico.

National Planning in the Conservation of Natural Resources

By HENRY S. GRAVES

President, The American Forestry Association

Henry S. Graves

THE recent report of the National Resources Board is one of the most significant public documents on the conservation of natural resources that has been published. Its importance lies in the fact that it lays the ground work for coördinating and rounding out public policies in the several fields of conservation, for the integration of the activities of public agencies concerned with natural resources, and for comprehensive and long-range planning of public effort.

The conservation movement was vitalized by President Theodore Roosevelt in 1908. Under his leadership the available information regarding the natural resources of the country was assembled, federal and state activities greatly enlarged, and an educational campaign set in motion that has had great influence in advancing a general appreciation of the problems and needs of conservation. A great deal has been accomplished in the last twenty-five years in separate fields, as for example in forestry, agriculture, local water use and control, recreation, and wildlife management.

From a national standpoint, however, the efforts heretofore made constitute only a beginning in meeting the social-economic problems involved. Moreover, there has been a tendency to specialization of effort in separate fields whose problems are closely related, without effective coördination. In the last five years or so, however, the agencies dealing with land-use have made definite progress in correlating their efforts toward a common objective. Less has been achieved in unifying the activities in land use with those in water use and control.

Building on these foundations, the National Resources Board has defined the problems of natural resources in the light of present-day conditions, filled gaps of knowledge by special studies, and proposed a broad policy and plan by which the coördinated use and development of natural resources may be made more effectively to serve national and local needs. The Board's report is based on extended studies by Government bureaus, of state agencies, and of special organizations established in 1933 and 1934. It has undertaken to crystallize and harmonize recommendations previously made by those working in separate fields and has introduced additional features which have been developed in connection with the federal program of economic and industrial readjustment.

The most significant feature of the report is the emphasis given to the social-economic, or human, objective in public effort in the conservation and development of natural resources. The aim is to lay permanent foundations for industry and employment, in contrast to the type of temporary prosperity which characterizes rapid liquidation of resources and which often is followed by industrial recession and widespread local distress. Soil erosion is to be controlled on a wide scale not only to safeguard the interests of the farmer today but to maintain the basis for permanent agriculture. Forests are to be so handled as to provide continuous supplies of raw material for use and also to sustain permanent industries and uninterrupted employment in the woods and at the mill. Public works on rivers are to be built, in some cases to prevent damage by floods and, in other cases, by separate or multiple-service works, to provide sustained supplies of water for domestic and industrial use, sanitation, power, irrigation, navigation, and recreation. Stabilization of communities, security of life and property, opportunities for industrial development now and for coming generations, are purposes that pervade the entire plan.

When one reviews the features of the plan outlined in the several fields of natural resources, it is evident that there are many points of interdependence between them. Thus forestry cuts across a program of water use and control, agriculture, erosion control, recreation, wildlife conservation, and even mineral development. Forests will play a part in programs for the retirement of sub-marginal lands, zoning in land use, subsistence homesteads, decentralization of industry, and regulated grazing. Natural resources, if they are to render their highest human service, should be considered together, with many interrelations that must be recognized in their conservation, development, and use.

In practically all fields of conservation public participation is needed. It may take the form of public education, research, demonstration, coöperation by advice or actual financial aid, construction of public works, or regulation of practices that may result in public injury. Precedents for such public participation can be found in connection with nearly all the major resources. The report advocates a larger expansion of public participation in the conservation and development of natural resources. In these activities there is in no sense a purpose of interfering with private initiative in the development of resources. On the contrary, the purpose is to provide a larger freedom of the individual by removal of obstacles that have led to industrial breakdown and widespread industrial and personal distress, and to lay foundations for a more stable and enduring economic and social life.

In this new effort the Federal Government would play a larger part than heretofore, first by its leadership in comprehensive and coördinated planning of public activities; second, in more liberal financial aid to states and other agencies in meeting local problems; and, third, through a

larger program in meeting special federal functions in public works, in the ownership and operation of public reservations, in research, experiment and demonstration, in combatting plant and tree pests, and in public education. In the proposals of the National Resources Board, the Federal Government would look chiefly to the states or lesser units to handle local problems, except in case of projects that fall within the appropriate horizon of federal functions. The aim is to assist the states and local agencies. It would insist on local initiative and appropriate financial contribution from local sources. In the report there is, however, a clear determination that many problems which have not been adequately met or have been allowed to drift shall be attacked through Federal leadership and support. Such, for example, are the problems of soil erosion, maladjustment in land use, flood control, seasonal low water flow of streams, and pollution of waters.

The spirit of public action with reference to conservation would be one of coöperation and aid in order to encourage affirmative effort on the part of private interests which control natural resources. Nevertheless the National Resources Board, very properly in my judgment, indicates that public regulation should be invoked, if private owners are unwilling or unable to safeguard the interests of the general public by proper field and industrial practices. Definite reference is made to this principle in the case of soil erosion, forestry, power development, and the handling of certain mineral resources. Private industry and individuals dealing with natural resources are to be given an opportunity to adopt measures that will prevent injury to others and the community at large, with liberal public aid. If they fail, the public in its own protection should impose restrictions on the handling of the resources.

One of the important problems in a national program of coöperative work relates to the division of the cost of public works and other measures where the benefits are in large measure local. At the present time there is a demand for many public works projects entirely at federal expense, though the chief benefits are regional or local. Special consideration is given to the extent of federal participation in the cost of water improvements in the section of the Report on Water Resources. The Mississippi Valley Committee is quoted as proposing that: "To projects of chief benefit to local communities, Federal funds may be contributed to the extent of 30 per cent of the cost of labor and materials"; and: "To projects of substantial benefit to Federal interests as well as to local communities, Federal funds may be contributed in excess of 30 per cent of the cost of labor and materials, the amount of the Federal contribution in excess of 30 per cent to be determined by the proportion of benefits definitely applicable to a recognized Federal interest."

The foregoing quotation is given to emphasize the importance of the problem of safeguarding the National Treasury from legislative appropriations governed more by political log-rolling than by sound planning in the national interest. Obviously no formula can be offered that would meet the needs of all forms of public coöperative effort in conservation. It is, however, essential to adhere to the principle of adequate local contributions to cost except where public works or other undertakings are clearly national in character.

Another problem in public coöperative undertakings, that may escape the eye in a casual reading of the report, relates to the lack of legal authority of local governmental units to coöperate with the Federal Government in public works or for states to make mutual compacts for construction of specified works affecting two or more states. It may be desirable for the states to provide authority for a type of conservancy district, such as exists in Ohio for flood control: districts authorized under prescribed procedures to make assessments for local benefits. The carrying out of national coöperative plans will in the long run require federal and state legislation along these lines.

Throughout the report there is pointed emphasis on the need for further scientific and economic research. Every effort in long-range national planning reveals serious gaps in our knowledge of local conditions and of technical features of the problems encountered. The very formulation of problems is of value in determining the features most in need of special study. Intelligent planning for research is as important as economic and industrial planning. The two must go hand in hand.

One of the most difficult problems of government, in connection with public activities in conservation, has been to secure effective coördination of federal bureaus one with another and coördination of federal activities with those of the states and other agencies. The National Resources Board proposes, as a first step in meeting this problem, the establishment of a permanent National Planning Board and the encouragement of State Planning Boards which would work in close coöperation with the Government. The National Planning Board would be charged with the responsibility of coördinating the planning policies within the Federal Government and these with the policies of the states and local coöperating agencies. The Board would also act as the central agency in encouraging and assisting regional, state, and local work of planning. The Report recommends also a permanent Land Planning Section, with functions similar to those of the present committees of the National Resources Board; and a permanent Public Works Administration, with a Works Program Committee and a series of advisory planning committees.

The recommendations regarding the organization of planning work represent a long step toward a more effective correlation than heretofore of closely related public activities. The plan may not be the final answer to this trend of extreme specialization among bureaus working in separate but allied fields that has frequently caused conflict of point of view in public policy, but it is clearly a great advance toward that end.

The Report of the National Resources Board is a summary of detailed reports of a number of federal bureaus, committees, and boards. It gives a broad view of the natural resource problems and many specific recommendations of policy. It is specially valuable in clarifying the purposes of the various new undertakings in land-use and water-use and control. Doubtless the Report will be followed by the publication of the special reports of the different agencies upon which it is built. It is hoped that these various reports will have a wide circulation. They should be very helpful in dispelling the present confusion in the public mind regarding the various federal agencies now active in problems of recovery and social-economic readjustment.

ILLICIT TRAFFICKING IN BEAVER

BY CALVIN RUTSTRUM

PART I

FISHERY boats leaving Duluth, on the extreme west end of Lake Superior, reach the Indian village of Grand Portage in from twelve to eighteen hours. The few unassuming huts, a store, and a rock-cribbed dock are still the only identifying marks of a very important niche in the history of the North Country. It was here that in 1785 Mackenzie and his party left the coast and penetrated the vast wilderness which still lies, with no apparent modification, for a thousand miles to the north.

The name Grand Portage carries its own significance. A portage of nine miles from Lake Superior northeast to South Fowl Lake is necessary to reach the navigable waters of the southern watershed. From this point, travel by canoe becomes infinitely varied in choice—northwest to the Rocky Mountains and Great Slave Lake, north to Hudson's Bay, with routes northeast to the famous Albany River and the myriad ramification of waterways from James Bay.

This vast section so richly endowed with lakes, rivers, timber and marshland was referred to in early history as "The Fur Country." In international trade centers it developed an even more specific nomenclature as "The Beaver Country." It is not surprising, therefore, to find that it became a field of attraction and bitter conflict even during the incipient stages of its development. Various companies were formed who found men eager to risk the perils of weather, assaults by Indians, possible starvation, and the

In the beaver country of the Northwoods.

Travel was mainly by canoe, in this lakeland of the "Fur Country."

bullets of competitive parties in order to extract a fair harvest of beaver pelts.

This conflict gained greater proportions as the trade increased; until in a land without law, the business of trading was indissolubly associated with the business of fighting, connivery and trickery. This was allayed somewhat with the advent of certain charters, but the tyranny of the chartered concerns became almost as bad for the enterprising individual and the Indians as the former instability of free trade. Ultimately, the restricting arm of the law reached the country and the vicissitudes became rapid and many in the control of the fur industry. Commissions were established, with a code of laws, to compel order and to protect the greater and lesser principals.

Consequently, at the present time there are laws pertaining to game and fish, which include fur bearing animals. The state, in its sovereign capacity, is the legal owner of game and fish; and their taking is subject to such restrictions as the state imposes by acts of legislature. This state ownership is not inferred to be in the sense of proprietorship but in its sovereign capacity as representative, endeavoring to benefit all its people in common. In theory, such legislation has the essence of a practical outcome; in reality, it drifts into complications. Families born and raised in the wilderness—no less the individual inhabitants—feel that they have the squatter's and the woodman's prerogative to abrogate to themselves rights pertaining to the capture of game, which, they believe, cannot impose injustice upon those leading an urban existence. They harbor such thoughts as natural rights; and lay constructions of tyranny and invasion upon any effort of the law to restrict their use of these natural resources which lie at their very door.

This feeling of invasion reached its greatest state of provocation when the government found it necessary to conduct a systematic trapping of beaver to protect the forests. Regardless of how the issuing of license might be conducted, it could have but one construction placed upon it by the indweller of the forest—that of political parasitism taking growth on his own hallowed ground. The unwritten law of the trapline is traditional and strong, and the violation of it has frequently left human bones bleaching in the winter sunshine. This sort of law the woodsman understands; that of the commonwealth, not so well.

Curious as it may seem, some of the most adventurous aspects of illicit trafficking of beaver have taken place during the last fifteen years. This may be due to the increased accessibility to certain areas, and to the added dominion over National and State Forests. It may also be due to a new phenomenon in the traffic—the use of airplanes. This development, however, is relatively late; and it is desirable to go back a few years prior to that time when the battle between the forces of the law and the outlaws was less mechanical and more one of brain and brawn.

The graph of events took an exceptional rise about a year after the World War. Outlaws were at work along the southern watershed to Lake Superior, east in the Vermilion and Hunter's Island country, and north beyond the pale of the law. In the event of their apprehension, the law demanded that these outlaws be caught in possession of beaver skins; and they were, therefore, at liberty to come and go at will, to equip themselves at the various outposts, and to be in full possession of such equipment as would be incidental to their trade—just as long as they did not have contraband fur in their possession. If caught with pelts, their entire equipment, including the necessary impedimenta for living in the woods, would be regarded as tools

A good yield of beaver pelts—highly incriminating evidence.

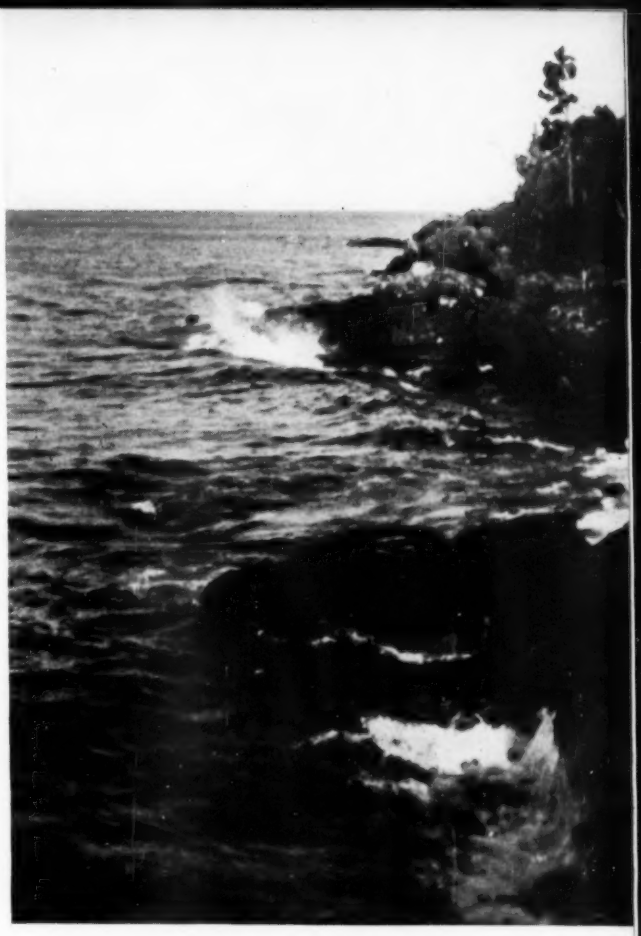
of malpractice and become the property of the state. This confiscation of camping equipment had a peculiar reaction and an important significance in woodsman's psychology, as later will be pointed out.

Early one October morning three stalwart looking men left a boat at Grand Portage and moved with free woodsman's strides through the cold drizzling rain. They were of that stature and hardened mettle as one would expect to find in Kentucky mountaineers; but there was more the twinkle of an added intelligence in these men, plus a carefreeness in demeanor, that suggested the river driver. This being a true narrative, propriety demands that their names be withheld. Perhaps it is enough to say that they were brothers, and that they were three of the most formidable factors the government has had to contend with in the illicit trafficking of beaver.

In spite of the fact that these brothers were openly known and regarded as beaver outlaws, they were not treated ignominiously. At outposts and waterfront trading centers they could always conduct such business as would imply integrity and good standing. This is rather anomalous in one sense; in another it has that peculiar significance of illustrating the attitude of many people in connection with the legislative control of wildlife. Fortunately, the restricting eye of the law sees things differently. And while the three outlaws were preparing to move to the interior, the law was already marshaling its forces to contest any rights which were not written in the common code. Their log cabin, on Lake Superior, was under constant surveillance, and when, on a frosty morning, the chimney failed to emit smoke, there was a busy stir in the wardens' camp. The grandiose game of hide-and-go-seek had begun, with the wardens doing the seeking.

It was three trail-weary outlaws who climbed a rocky promontory jutting out into one of Minnesota's northern lakes. From this vantage point could be seen the west end of the portage trail which formed a link in the water route to the east and north. The nature of the country made it almost prohibitive to enter the upper chain of lakes by canoe at any other point, and it was therefore evident that if the wardens intended to patrol this section of the country their appearance would very likely be made at this portage trail.

While two of the outlaws slept, the third held vigilance over the moon-flecked water; an ear ever alert for the dip of a warden's paddle, an eye constantly scanning the surface for a riffle that was not made by the wind. This situation has no little measure of the dramatic aspect. Here a silent watcher with feral propensities seeks to stem the inroads of an ordered society, and remains sleepless if necessary to check its progress. The moon playing fantastic shapes on the forest, the quiet and peace of the night, a pair of loons setting up a reverberating laughter far out on the lake, all are felt by this man-product of the wilderness to be his own. If we fail to absolve him of his social antipathy, certainly we cannot fail to esteem his almost Rousseauan affinity for nature.



The rocky coastline of Superior, jutting into the blue waters of the lake.

The night moved quietly on toward morning, and in the measure of events, it passed with an unremitting watchfulness. But on the sixth day, late in the afternoon, two figures were seen moving about near the water fifty feet from the portage trail. As near as the outlaws could determine, one was scanning the shoreline with a pair of glasses. The probabilities were that the outlaws had also been discovered by the wardens. So the night that followed was spent in a disturbing apprehensiveness in both camps.

Shortly before daylight the wardens moved to the far end of the lake and pitched their camp in deep cover. This was precaution,

(*Continued on Page* 95)

A vantage point at the west end of the portage trail.

FOR 1935 THREE EXPEDITIONS INTO THE FOREST WILDERNESS

The American Forestry Association's "Trail Riders of the National Forests" to Explore Wild Areas in Montana, Wyoming and New Mexico

THREE great wildernesses—the most intriguing, the most primitive country between the purple deserts of the Southwest and the glaciated peaks of the Northern Rockies—challenge the Trail Riders of the National Forests in 1935.

Beginning in early July, these unique riders, organized in 1933 by The American Forestry Association as a means of public exploration of the remaining wilderness areas in America, will explore untamed areas in Montana, Wyoming and New Mexico. More than three hundred miles of trail, much of it known only to forest rangers and scattered woodsmen and geologists, will be covered by the explorers.

Three parties of twenty-five riders each are being organized. The first will enter the wild and rugged wildernesses of the Flathead and Sun River, in Montana, early in July. The second will move north from Kemmerer, Wyoming, a few days after the first party returns to explore the little known Wind River country of the Bridger Wilderness, just west of the famous Shoshone Indian Reservation. This party will return early in August, a short time before the third party will leave Silver City, New Mexico, for the expedition into the great Gila Wilderness, associated with cliff dwellers and the romance of the picturesque Southwest.

As with previous expeditions, the United States Forest Service will cooperate with The American Forestry Association in these excursions into the primitive woodlands.

The Flathead and Sun River primitive areas join to form the greatest wilderness in the continental United States—more than one million acres of mountains that lose their peaks in the clouds, canyons that sink out of sight, virgin forests that unfold as the sea, and unknown lakes in glacier basins. It is a land where elevations change with breathtaking abruptness. Here the Blackfeet Indians held their ceremonial sun dances; here Sieur de La Verendrye, the famous French explorer, and Lewis and Clark, the intrepid American pioneers, first saw the "Shining Mountains" on their way to the Pacific Northwest. It is a land that once held the largest buffalo herd on the continent.

Into this great wilderness three parties of Trail Riders have ridden—two in 1933 and one in 1934. Into it they will ride again, opening up new trails, penetrating its fastness to new and amazing beauty.

The Bridger Wilderness, in Wyoming—the wild land of the Wind River—presents an equally colorful history. As the name implies, it was closely associated with the famous trader and guide, Jim Bridger. The old Oregon Trail passed through the region. It is the headwaters of Green River, a country of dramatic ruggedness, dotted by countless lakes, a country which awes in its massiveness.

The Gila Wilderness in picturesque New Mexico is one of vast solitude, striking mountain scenery, canyons and gorges, big timber, big game, and rushing streams. It is given added color by the presence of cliff dwellings and the romantic history which surrounds them. Smaller in area than the Flathead and Sun River wildernesses, the Gila is so distinctly different that it is without parallel in the country.

Three great wildernesses to challenge the Trail Riders in 1935! Plan now to meet it! Plan to ride with one or all three parties. Further detail will appear in forthcoming issues of AMERICAN FORESTS.

You Go Beyond All Roads

When you ride with the Trail Riders of the National Forests you turn your back on civilization. Your trail begins where the road ends. You see nature unmarred by man, virgin forests untrod save by the wild things that haunt them. You see unnamed lakes, mountains that seem to touch the stars, age-old solitudes where creation still holds its masterpieces.

You Sleep Beneath the Stars

You spend days in the saddle, evenings around dreamy campfires, and nights in restful sleep beneath the stars. You explore afoot intriguing corners of the wilderness; you fish in swift streams where few have fished before. You sit awhile in mountain meadows ablaze with rare and beautiful wild flowers; you stalk wildlife in its native haunts.

You Ride With Forest Rangers

Fellow members of The American Forestry Association are your trail companions—men and women of mutual interest, all lovers of the out-of-doors. United States Forest Rangers, the guardians of the wilderness, ride with you. Expert guides, packers and wranglers serve every need of the trail. Both riding and pack horses are thoroughly trained—sure and safe.

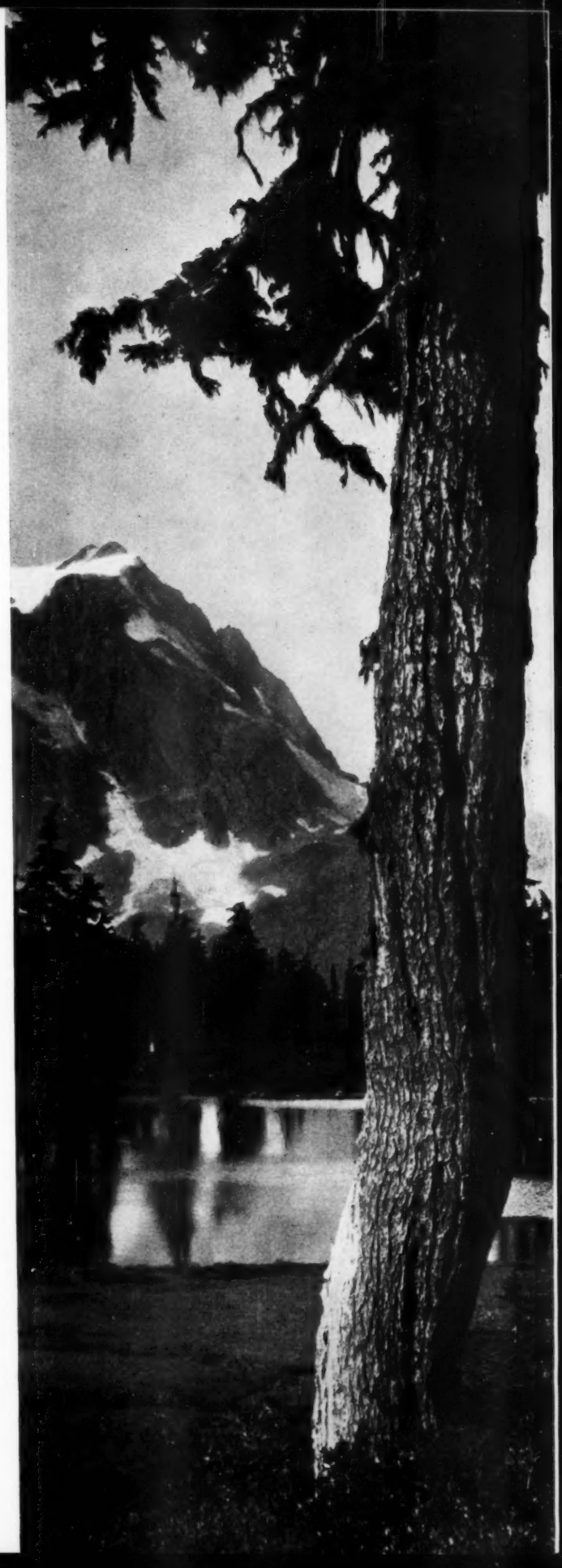
You Go At Actual Cost

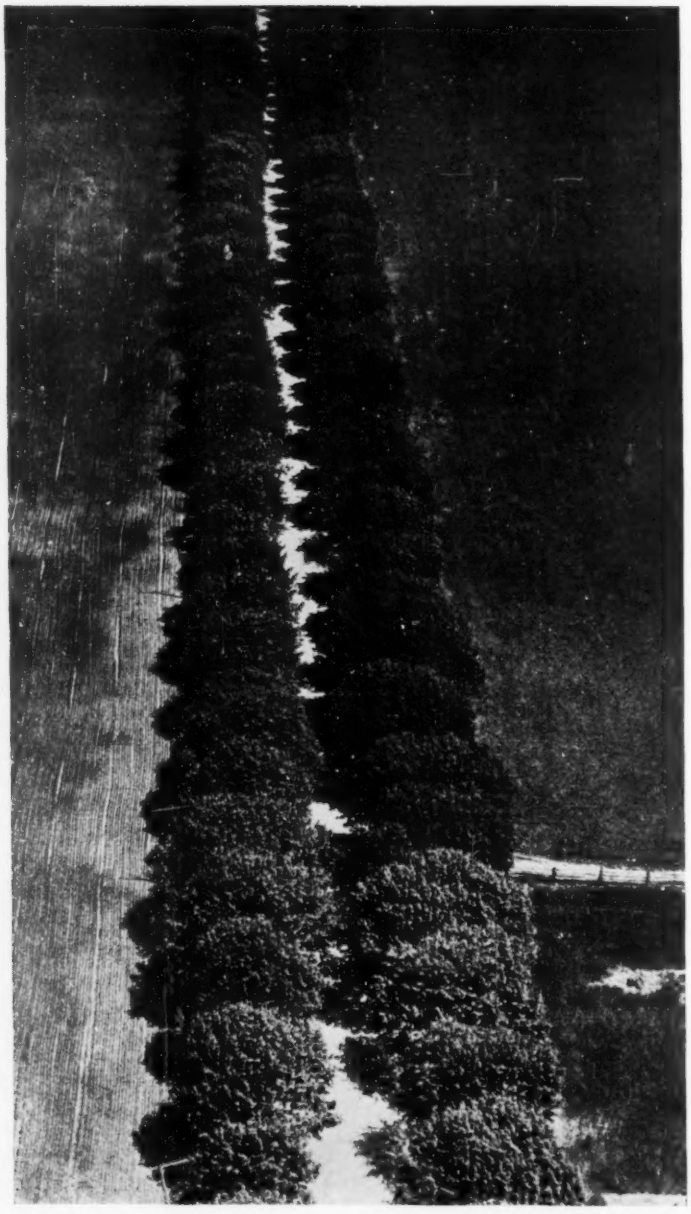
Inasmuch as these expeditions into the primitive forests are sponsored by The American Forestry Association as a service to its members, you go at actual cost. All trips are on a non-profit basis. The usual cost to each rider, including everything except railroad transportation, is about seven dollars a day. Every detail is arranged for you by the Association.

How You May Become a Trail Rider

Any member of The American Forestry Association—man, woman, or older child—is eligible to ride with the Trail Riders of the National Forests. Non-members may become eligible through nomination by a member in good standing and acceptance for membership in the Association. Reservations may be made immediately. No money is necessary now; your word is sufficient.

Write Today for Complete Information—
And Plan to Ride With the Trail Riders





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Green Highways To Recovery

By ERLE KAUFFMAN

IT IS impossible to conceive of American life today without the broad highways that jig-saw the continent. Toward them American business turns for the swift and safe consummation of its traffic problems; to them the American mind anchors hopefully for its hours of leisure. And over them the great juggernaut of recovery may roll, sowing the seed of a permanent national welfare that has its source in the most useful adjunct to man's existence—trees.

In line with President Franklin D. Roosevelt's new recovery principles that emergency relief funds be applied to useful work—useful in the sense that it affords "permanent improvement in living conditions or that it creates future new wealth for the nation"—a new project, born in the cradle of human need, rears its head in every community in the country. The Federal Emergency Relief Administration has issued a new working procedure whereby state, county and municipal administrators of public relief funds may undertake the planting of trees and shrubs along highways, and along parkways, city streets, in public parks, as windbreak plantings, and other places where they will be of broad and lasting value.

The idea, of course, is not new. It has been simmering in the sun of roadside improvement and beautification for more than a decade. In some regions, particularly in the East and far West, it has blossomed forth in glorious fulfillment, but in the main its progress has been desultory. Even with intense roadbuilding made possible by emergency relief funds in the past, little more than one per cent of the allotments has been available for roadside improvement.

The Administration proposes to use local labor under supervision of landscape architects, and the work will be carried out according to established plans sponsored by local citizen groups and organizations. The local projects may be large or small, involving hundreds of trees or thousands, depending entirely upon labor and planting demands and upon the desire of communities to add charm, utility and permanency to their landscapes.

Aside from creating a useful and permanent asset that will benefit everyone alike for years to come, communities and states may find in this new project a ready solution to their relief problems. For the planting of trees is essentially a labor undertaking, ninety per cent of all expenditures going to the employment of man-power. Thus, if a community is allotted $100,000 for emergency relief, $90,000 remains in the community in wages if the work done is that of developing green highways, shaded streets and beautiful parks.

Trees and shrubs for these plantings, according to the Federal Emergency Relief Administration, may be purchased from reliable nurseries. This means that there are upwards of 50,000,000 trees suitable for roadside, street and park planting immediately available, for nurserymen report this amount of stock on hand. The supply includes ornamental evergreens, both broadleaf and deciduous; deciduous street and ornamental trees; and deciduous ornamental shrubs, all of the age and size to meet the requirements for planting this year. Larger trees may also be transplanted, and the F.E.R.A. authorizes the purchase of trucks, derricks, rollers and other equipment essential in their handling.

Spread as they are over green valleys and bold uplands, across windy plains and heat-stricken deserts, American highways constitute one-third of the world's total, or eighty per cent of the roadways in the Western hemisphere. From this may be garnered some idea of the dependency American business and American leisure place upon this network of roads—a system that provides one linear mile for every square mile of land and water in the nation.

President Roosevelt recognized this dependency early in his recovery undertaking, and roadbuilding has been ac-

U. S. Forest Service

The planting of trees along highways such as this contribute greatly to the permanent welfare of communities. It offers a recovery work project where ninety per cent of the cost goes to labor, and where the cost of maintenance is negligible.

celerated in many of his major programs. Miles of concrete have been poured, tons of gravel have been laid, and state and communities have awakened to a permanency where man and the land share alike in new and far-reaching benefits.

And these benefits, these attributes to improved living conditions, are being demanded more than ever by the President as his recovery drive enters into a new year and a new phase. He left little doubt about this in his message to Congress on January 4. Men must work, he decreed, but that work must be useful in a permanent sense—useful to man, useful to the land.

Thus roadside improvement, the shading of city streets, the beautification of parks and parkways, windbreak plantings, and other phases of landscaping, offer a broad compelling challenge to permanency and usefulness in recovery. They fulfill as no other enterprise the President's hope that in the expenditure of federal relief funds living conditions will be improved and the national wealth enhanced.

For while the primary objective of highways and streets is to accommodate traffic, their ultimate service to the public depends largely upon their proper improvement. Shaded highways add tangibly, as well as intangibly, to the present and future wealth of communities. They are in themselves a long-time investment which pay substantial dividends to rich and poor alike. The initial cost of planting is low, and, unlike many other work projects, the cost of maintenance is neglible. Trees of good stock, if properly planted in suitable soil, have a habit of just growing. They increase property values; they attract money-spending motorists. But to the millions of humankind who glide over their surfaces, seeking relaxation and renewed vitality, green motorways reach their fulfillment.

They give something that the wealth of the ancient Pharaohs could not buy—something that is enhanced as time moves on, as young trees blossom into full glory, become stately and honored companions of the open road. For there is a spiritual quality about green landscapes that rests the mind and calms the soul—a (*Continuing on page* 95)

U. S. Forest Service

Trees are available for roadside planting. Millions, suitable for this purpose, are now growing in the nurseries of the nation. They may be purchased and planted with emergency relief funds by states, counties and municipalities.

PTARMIGAN ON MOUNT RAINIER

By C. FRANK BROCKMAN,
NATURALIST, MT. RAINIER NATIONAL PARK

(Photography by the Author)

Summer finds the ptarmigan clothed in the grey-brown plumage which is a perfect natural camouflage in the rocks and stunted vegetation of the Alpine regions where it is found.

AS THE season changes so changes the ptarmigan! But the unique feature of a varying seasonal plumage is not the only thing of interest in these birds. That they change color with the seasons is one thing—any good book on birds will explain in detail that fact—but to see and photograph ptarmigan at all seasons of the year and in all color phases is quite another matter. And so because a complete photographic seasonal record of the ptarmigan is rare, we undertook some years ago to obtain such a record from the upper slopes of Mt. Rainier in the State of Washington.

There are several different species of ptarmigan in North America and while all vary slightly, the differences between them are not great. Essentially an arctic bird, they range southward in the mountains of the west where, at high elevations, they find conditions quite similar to those which are characteristic of the areas within or near the Arctic Circle. Ptarmigan have been called "arctic grouse," which is an apt description in that they belong to the grouse family and have many characters in common with others of this clan. Upon the upper slopes of Mt. Rainier, one finds what is technically known as the Rainier White-tailed Ptarmigan. In our search, we found them as high as 10,000 feet — well up on the glaciated flanks of this old volcano —and as low as

In the fall the grey-brown plumage begins to give way to the white of winter. At this season the birds are mottled, or blotched white and grey-brown, rendering their appearance very peculiar

4,000 feet in secluded and rugged canyons where they evidently had retreated from their lofty domain of the higher elevations as the rigors of winter drove them to more sheltered locations. We had one report of a bird seen in February, at 2,500 feet in the heavy timber of the Canadian Zone but we did not actually see this bird. Our correspondent stated that it was snow white, and while it had evidently found this elevation more suited to its comfort climatically, its striking plumage was very conspicuous against the deep green of the forest on account of the very light snow at that low elevation. We suspect that this ptarmigan soon learned to its sorrow that such a choice of habitation for the winter was a poor one. Its only item of defense—that of protective coloration—was of no value there. But while winter holds only occasional and more or less lucky glimpses of this bird, summer and fall for the painstaking observer finds the ptarmigan comparatively easy to discover. Generally at these seasons on Mt. Rainier they range between 6,000 and 7,000 feet. This is a region of timberline; of dwarfed windblown trees whose twisted and contorted forms testify to the rigors characteristic of this elevation. Here the dazzling white of permanent snow fields flashes in the clear sunlight—almost blinding in the brilliance of the reflected sun's rays—and the rugged steep-walled glacial gorges, choked with ice, lend wild beauty to the setting which the ptarmigan calls home. It is not an easy region to traverse, even in summer, but these birds are fairly numerous and during summer and fall may be readily found if one is careful and observing. The nesting season occurs from mid-June to the first week in July. During that time one must be careful in hiking across the alpine meadows through the tufted growth lest he unknowingly step upon one of these birds that so resemble the vegetation in which the nest is built. Relying upon their protective coloration for protection, they move from their eggs only as the last resort. The bird is most often discovered when some slight movement is picked up out of the corner of one's eye—a nervous movement that makes it possible to locate the nest. Upon one occasion a nesting ptarmigan was found late in June at 6,700 feet and so engrossed in her motherly duties of hatching her eggs was she that it was possible to handle her without causing undue alarm on her part. Upon lifting her from the nest she would merely flutter free again and settle back upon the eggs, remaining perfectly quiet and apparently still confident of her powers of camouflage. Later she hatched her eggs and could be seen leading her chicks out upon a nearby snowfield where insects blown in from the meadows nearby were frozen in the snow awaiting the coming of her flock. Thus the ptarmigan is often blessed with the natural refrigeration of a nearby snow patch or glacier.

Springtime finds the white of winter transforming to the grey-brown of summer,—and again the ptarmigan has an odd but beautiful appearance.

In the full white of the winter plumage, ptarmigan resemble their snowy background so closely that they are almost invisible, except for their shiny black eyes and beak.

The nesting season over and fall in the offing, ptarmigan take on a spotted appearance and generally range higher where barren rocks are interspersed with small patches of new snow. There the peculiar mottled appearance of their plumage still blends well with the terrain.

One first becomes aware of their presence more by ear than by sight for while the pattern of their plumage may dissolve into the background their gentle clucking, not unlike that of a barnyard hen, often betrays their presence. Once catching this faint sound the observer merely scans the nearby earth and as his eyes become accustomed to detailed scrutiny, the birds are often seen literally to rise into view like the image upon a photographic print in the developer solution.

Yes, the summer and fall seasons find this bird comparatively easy to discover. But by December they are white and winter has laid its heavy hand over "the mountain." It is in this season, and in that of spring which follows, when a sight of the ptarmigan is rare. Yet it is at this time that one gets the greatest thrill in finding and photographing the birds. For after finding them one must utilize his knowledge of camera craft to the best advantage in order that the resulting photographs may adequately portray the snow white bird against its equally snow white background. Someone has said that the ptarmigan in winter resembles a couple of shoe buttons in a snowbank,—and that is an apt description!

Camera hunting for ptarmigan in winter is an exhausting and often dangerous procedure. It is then that the rugged timberline zone, not overly hospitable at best, offers a cold welcome to anyone who pursues such a hobby. Skiis or snowshoes are necessary in invading the ptarmigan country. Camera equipment is bulky and of such nature that a sudden shifting in the pack sack may throw one off balance in a dangerous situation. The photographer creeps along windswept ridges and searches among clusters of dwarfed alpine firs. Occasionally an unforseen snow cornice gives way and the "hunter" slides suddenly down a steep snowy mountainside that may have dangerous possibilities of an avalanche.

Under such conditions, we searched three winters for ptarmigan. We looked high and we looked low for the coveted photographs but no birds did we find—yet these many failures only whetted our appetites.

Then when it seemed that our complete photographic record was to be far in the future, we suddenly stumbled upon a number of birds and achieved the results for which we had sought so long and so hard. We were returning home one April afternoon down a narrow glacial gorge when a clump of alders was noted protruding above the snowdrifts. With our quest ever in mind we detoured slightly so that our path might take us through this spot that gave promise of being a possible habitation of ptarmigan. We had about given up hope once more when suddenly we noted a shadow moving jerkily across the snow. At first we were unable to see anything tangible enough to cast a shadow. A careful second book, however, brought into view a ptarmigan in white plumage not ten feet from us. As long as the bird kept its eyes and beak pointed away from us it was practically invisible against its snowy background. Had it refrained from moving, it is quite likely that we would have passed it by. The bird wandered slowly about among the alders, showing little or no fear, while we made numerous pictures with both still and motion picture cameras. Then, as if to oblige, it flapped its way along an alder branch and began nibbling the buds. Finally it zoomed away in typical grouse fashion to disappear in a hole in the snow along the face of a granite cliff nearby—the heat radiating from the rock having melted small natural caverns that served as hideaways for the birds.

Two weeks later we returned to this same place hoping to get more of these unusual "shots." We were both pleased and disappointed for instead of finding the birds in their white plumage we found that they had begun to change to their grey-brown color of summer. Thus we were able to record upon our photographic plates the fourth and last color phase of this interesting bird.

Our quest was apparently ended. But the following summer we discovered a hen and several nearly grown chicks in the high country and the cameras immediately went to work once more. Yes, even though we had apparently achieved our purpose, the ptarmigan of Mt. Rainier always will be replete with interest as far as we are concerned. Their habits and their habitat are such that one will never become contemptuous of them because of too great familiarity.

FIFTY DOLLARS FOR A NEW FORESTRY TERM

For the best word or term that will distinguish commercial forestry from non-commercial forestry, a member of The American Forestry Association, who prefers to remain unknown, offers a prize of $50.

It is the feeling of the donor that the term "Forestry," which is applied to the administration of uneconomic forests such as those designated for recreation, research, watershed protection and erosion control, as well as to commercial forests, which involve the economic growing of forest trees to be harvested on a profitable basis like any other crop, is too indefinite to clearly differentiate the two broad objects of forest management. In the interest of clearer public understanding and advancement of industrial forestry, he believes a new term should be coined that will more sharply and definitely express its meaning and significance.

His only stipulation in offering the prize is that the word or term must be euphonious and at the same time scientific.

Anyone is eligible to compete, regardless of training, profession, or membership in The American Forestry Association. The contest closes on March 31, 1935, and no entry will be considered bearing a later Post Office cancellation date. The winning word, or term, will be announced in the May issue of AMERICAN FORESTS.

Each competing term must be printed on a plain envelope with the name and address of the person submitting it sealed within the envelope. Any number of words or terms may be submitted by a single contestant, but each one must be printed on a separate envelope with the name and address of the contestant sealed inside.

Address all entries "Forestry Term Contest," The American Forestry Association, 1713 K Street, N. W., Washington, D. C. No entries will be returned.

EDITORIAL

Gun and Glass Hunters

THE idea called conservation has two or three fundamental cleavages which prevent unity of action among its proponents. One of these cleavages is between those who hunt with a glass or a camera and those who hunt with a gun. Very rarely have they agreed on a common program. Iowa is the only state recently exhibiting signs of actual cooperation between these two groups. One of their most frequent points of difference is whether those non-game animals called predators or "vermin" may be sacrificed in order to secure a greater abundance of the game animals on which they prey. Both sides have assumed that the sacrifice of predators would actually increase game to some extent. They differ only on the worth-whileness of it.

Paul L. Errington, the scientific mouthpiece of the Iowa Conservation Plan, writing in the last number of AMERICAN FORESTS, asserted that, within ordinary limits of wildlife population, this assumption is not true in at least one game species—bobwhite in the Lake States. He supports his assumption by a new kind of evidence—actual counts of winter survival of wild coveys. The previous arguments have been based on stomach analyses and isolated observations of behavior. Errington's assertion carries two corollaries: better food and cover is the only effective way to increase quail; shooting in dense quail populations has the same effect on future density as predation, namely, none.

Here, it seems, is a new basis for solidarity between sportsmen and protectionists, assuming that both have the intelligence to comprehend the new evidence, and assuming that Errington's principle will prove true of other game in other regions. For the present, both factions should at least unite in vigorously pushing the further researches necessary to verify Errington's findings, and map out the animals and regions to which they apply. If research can show a logical basis for common cause between these now warring elements, then it will have advanced conservation farther at one jump than all the millions spent in the last decade for game restoration.

The Forest Code

IT IS quite generally agreed that a substantial portion of the forest land of the country must be entrusted to private ownership subject to the requirement that as rapidly as possible these areas shall be brought under management for continuous production of timber. The subjection to good management is important because from the public view it goes to the heart of the problem.

Never before have lumbermen and owners of forest properties been so imminently faced as now with some form of public regulation of their forest practices. In his current annual report emphasizing the effect of destructive lumbering on community life, Secretary of Agriculture Wallace declares that public regulation of timber holdings is necessary. The Mississippi Valley Committee likewise holds public control essential to assure adoption of constructive measures of forest practice by the industry, and the National Resources Board recommends public regulation in the event industrial self-government proves unavailing in bringing about necessary reforms.

These views undoubtedly express the growing trend of public thought and serve to emphasize the trial status of the forest industry today in respect to bringing about needed reforms in the treatment of its land and timber. Since June 1 last more than one-half of the private forest lands of the country have been subject to forest practice rules applied under jurisdiction of the Lumber Code. These rules were formulated by the owners and operators with the advice and aid of qualified public agencies. They mark a good beginning towards reform of destructive lumbering so far as it has been possible to put them into effect. Unfortunately these prescribed reforms do not as yet extend to the private forest areas controlled by related forest industries or to farm woodlands.

Public and private foresters alike realize that the application of forest practice rules under the Lumber Code has been seriously handicapped by the administrative difficulties of enforcing other provisions of that Code. Notwithstanding these handicaps, the progress already made tends to support the belief that sustained production of forest resources can be accomplished by code machinery provided all private forest lands are subjected to the same or similar codes of woods practice, and provided federal and state agencies will

furnish the cooperation needed to effect compliance without fear or favor.

It has been suggested that the present situation demands drastic public regulation of private forest operations. Such proposals are predicated upon the assumption that private owners will not or cannot perform the task which they have undertaken under the Code. Forest management with its countless variations over this vast country is still in the experimental stage. Neither private nor public agencies can make progress so rapidly alone as by team work, and if they are to work together to best advantage the relationship must be one, it seems to us, designed to stimulate the initiative of those who have a financial interest in the land. Such is the spirit and substance of the conservation section of the Lumber Code.

No intelligent person will argue that destructive lumbering should be longer temporized with. The question is how best to stop it and at the same time preserve the initiative and continuity of private forest industry. Drastic governmental regulations imposed upon the thousands of individual operators throughout the United States is easily advocated as a generality but specific application and enforcement by federal fiat is highly uncertain and speculative in point of results. It would seem to be the wiser course at this juncture to recognize the forest code, as now set up and operating in part, as the most tangible and promising framework yet devised to achieve private forestry, which means the end of destructive lumbering. Where the code is weak, it can and should be strengthened; where it is deficient, it can and should be built upon. If with this handling and with unified public help, the industry after a reasonable trial fails to meets its responsibilities in the undertaking, then another approach can be made in the light of clearer and more conclusive experience.

Grazing Issue Impends

THE issue of the right of the public to control with a free hand the grazing of livestock on the public lands of the United States is emerging from the long series of conferences which the new Grazing Control Division of the Interior Department is holding with stockmen at various points in the West. These conferences began last summer and are extending through the winter. They are for the announced purpose of clearing the way for the application of the Taylor Grazing Act, passed by Congress last June, chief purpose of which is to stop injury to the Public Domain by preventing over-grazing and soil deterioration. It is no secret that these conferences have developed unexpected difficulties in the application of the Act and in coordinating its administration with that of the Forest Service in regulating grazing on the National Forests.

As between the theory of public control of grazing as developed and practiced for thirty years on the National Forests and the interpretative theories of the Taylor Act as it applies to the Public Domain, there is a clear conflict. These two theories do not mix and basically are apparently irreconcilable. In the administration of the National Forests, the Government holds that the grazing of livestock is a privilege to be granted when and if it is in the public interest and compatible with other more important uses of the land. Permits issued by the Forest Service do not give the permittees a permanent grazing right within the National Forest, much as the larger stockmen have desired it. They merely authorize the permittee to utilize designated range under regulated use for the period stated in the permit, which varies from one to ten years. The Government thus retains complete control of the range and full freedom to put the lands to their highest public use.

As against this theory and practice, the Taylor Act is apparently being construed in its proposed application as investing private lands in and adjacent to a grazing district with an adjunctive right to public range within the district. A grazing right to public range would thus become part and parcel of private land within the grazing district and would give such lands an enhanced value growing out of this public grant. Furthermore, it would form a permanent, private asset subject to capitalization for long-time loans. The right seems further secured to the land owner by specific provision of the Taylor Act prohibiting the Secretary of the Interior from denying renewal of a grazing permit if denial "will impair the value of the grazing unit of the permittee when such unit is pledged as security for any bona fide loan."

While the Government under the Act could theoretically regulate grazing on its own lands, the surrender of free public control is none the less clear. So long as grazing is permitted, the Government would be obligated in perpetuity to furnish range to holders of grazing rights. New settlers could share in the public ranges only by buying or leasing at the owner's price private property with its adjunctive grazing rights. Grazing would unquestionably become the dominant if not exclusive use of the public lands involved and the whole administrative trend would be more and more in the interest of the stockmen rather than the general public.

Projection of this theory or plan of public land administration in the established conservation picture carries far reaching implications. The grazing use of the National Forests on the one hand and the Public Domain on the other are so interrelated that the two systems, diametrically opposed in principle, could not long operate successfully in the same region. Application of the adjunctive right principle to the public lands under the Taylor Act would inevitably foster political pressure to extend it to the National Forests and would at once place in jeopardy the public's unrestricted right to manage these great resources at all times for the common good. The potential issue is one of fundamental import to every conservation interest in the country.

Public Control of Destructive Land Use

By WARD SHEPARD

ARTICLE X of the Lumber Code is the first step—and a very important one—in an inevitable change in our whole land policy: the exercise of public control over uses of land that destroy natural resources, impair public works, weaken the national power of defense, injure the general welfare, and create destitution and unemployment that drain the public treasury for relief. We are on the verge of such a change.

Merely as a first step, Article X can and should be rapidly strengthened. Legislation along the general line proposed by the Article X Conference will, it is assumed, be enacted by the present session of Congress, thus giving to forest owners in organizing their properties for permanent production the broad type of governmental aid that is being devoted to agricultural reorganization. In addition to this legislative program, the basic principles of Article X must be extended to all forest lands. It must be carried out with the skilful and sympathetic help of an adequate advisory and enforcement force, counted not in dozens or scores of technicians, but in hundreds and ultimately thousands. Because of the large public interests involved, the oft-repeated assertion that Article X is a purely industrial undertaking must be challenged. It is a joint public-industrial undertaking, in which the Government must take a large and clearly defined part. At the present moment, the Government, on the contrary, is occupying an ambiguous position.

In order to clarify this ambiguous situation, the next step should be to create or designate a competent, adequately-manned Federal agency to represent the Government in carrying out Article X, and to aid the Lumber Code Authority, its Divisions and its constituent individual producers to bring about rapid and wide adoption of satisfactory forest practices. It must be clearly recognized, however, that the approach must be in the first instance educational and cooperative and that naked compulsion is not the key to progress. The industry must be given its full share of responsibility and full participation in carrying forward the whole enterprise.

Another important step would be to set up, through a grant of Public Works Funds, a series of large scale sustained yield management demonstrations on private forest land. in all the principal forest regions of the United States, through financial and technical collaboration of the Federal Government and private owners. These demonstrations should be on as large a scale at least as the erosion control demonstrations of the Soil Erosion Service, and should be provided with complete management plans, transport, protection, and technical supervision. In areas of farm woodlands, cooperative forest management and marketing associations should be created with federal financial and technical aid.

These suggested improvements would greatly strengthen Article X and largely hasten the progress already being made under it. But we must go far'her than the roundabout enforcement of Code provisions to assure protection of the public interest in the use of forest and other lands. The Federal Government must be vested with direct authority to control lands the misuse of which may impair navigable streams or public works, weaken the national defense, or injure the general welfare. It must be further empowered to cooperate financially and technically with the states for similar control on lands needing control but on which the Federal Government may lack, or choose not to exercise, jurisdiction. If the Industrial Recovery Act is to be revised and reenacted, it could well contain a provision on all forest lands similar to the oil control provision of the present Act.

Has the Federal Government the constitutional power to exercise control of forest and other lands? It assuredly has on all land tributary to navigable streams or to Federal public works, and that power would theoretically extend to most of the land area of the country. In practice, the Federal Government might prefer to restrict the exercise of such power to the more critical regions and cooperate with the states for control of less critical areas. Or it might prefer to begin experimentally in the Tennessee Valley and other similar projects, where it has an exceptionally strong case for land control to protect enormous public investments.

A broad regulatory law could empower the Federal Government to survey lands tributary to navigable streams to determine which lands must be controlled in the public interest, to prescribe proper use of each type of such land so as to prevent erosion, rapid runoff, deforestation, or destructive cultivation of steep slopes. It could set up in each such region an advisory and educational service to assist land owners to adopt the required new methods. It could make very substantial offsets against these requirements by direct contributions for gully control, fire protection, roads, trails, and other works of a public nature; by low cost rental of terracing and other machinery; by providing cheap forest planting stock, seed and fertilizer, and by making long time credit available for integral land rehabilitation and by largely directing Federal credit to such basic purposes.

Is the time opportune for such a step? Philosophically considered, any form of Government or any body of law which idly and helplessly permits the continued destruction of those basic resources on which the very habitability of large areas of this country depends, is derelict in its deepest obligations. To those who know the facts of erosion and deforestation in the United States as a whole, it is clear that large areas will be practically uninhabitable within a generation. It is equally clear that *laissez-faire* dependence on state or individual action to stop the destruction of natural resources is, in effect, an evasion of the issue. Those who flourish on exploitation, or who have the ultra-conservative view of the rights of private property, or who cling to the discredited economic and social philosophy of exploitative and rugged individualism, will deny the right and power of the Government to protect the masses against the destructive abuse of property rights. But reasonable men, including land-owners themselves, will readily recognize the right of any people to protect itself against self-destruction.

The way to begin is to begin. By a temperate, sympathetic, and tactful use of the regulatory power, coupled with the return benefits outlined above, we can and should now make a beginning in the long and arduous task of reforming land use through legislative power. Any voluntary system, even if it could summon the money and the intelligence to do the job, would leave the voluntary cooperator at the mercy of those who refused to cooperate. How can a private forest owner on sustained yield, for example, compete successfully with the pure exploiter?

The time is here to cut through the whole maze of confusion, conflict, and selfishness surrounding the problem of the right of the nation to protect its natural wealth from destruction, and to take the straight, direct, and simple course of Federal control of destructive land use.

Field and Forest for Boys and Girls

WINTER BUDS— NATURE'S ANSWER TO THE CHANGE OF SEASONS

By William M. Harlow

True terminal bud of hickory.

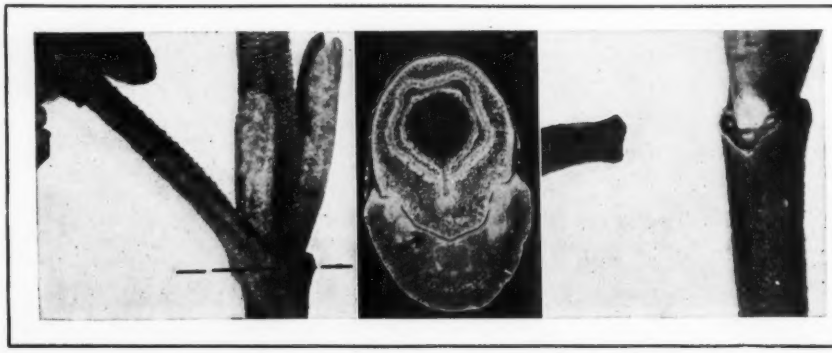
ALMOST any boy or girl who has looked upon a tree in winter has witnessed one of the great miracles of nature—the forming of winter buds. Few there are, however, who realize the true significance of these hardy and often inconspicuous additions to the leafless tree. In fact, the average boy or girl, or even adult for that matter, may find it difficult to explain how buds appear on trees at all after the leaves have fallen.

Yet there is no secret about it if one considers the wonder of tree and other plant life. Winter buds are, briefly, nature's answer to the change of seasons. Much of the earth's surface is alternately exposed to tropic heat and arctic cold — the so-called "temperate" climate. With such a handicap to tree and plant growth nature has been forced to develop numerous defenses. Among them is the transformation of a tree in full leaf to one bare of leaves, while at the same time it is protected at every vulnerable point from the icy winds and prying frosts of winter. Winter buds are the chief protectors.

It is likely that the average boy or girl will not notice tree buds until some time in December or January, and the natural conclusion is that they do not appear on the trees until this time. Nature, however, is much more far-seeing in this respect and begins to prepare for winter the latter part of July or the first part of August. By the middle of August or the first of September the buds are fully formed and ready for their responsibility of protecting the tree through the cold winter months.

Meanwhile an unseen but interesting change has been taking place at the base of the leaf stem where it is joined to the woody twig. If one makes a clean cross-section through the twig at this point so as to include the base of the leaf stem, the microscope will reveal a very definite layer separating the twig from the stem. This layer develops slowly, and eventually builds up next to the twig a more or less corky covering. On the outer surface the tissues weaken, and finally at the height of some autumn gale, or on a cold and frosty night, the leaf snaps off and sails away on what may be a long journey before it becomes a bleached skeleton drifted with others in a protecting blanket for fall sprouting seeds.

False terminal bud of elm, with flower bud below.



The separation of a leaf—to the left are shown leaf, twig and buds. In the center is a photo-diagram showing developing absciss-layer between leaf-stem below and the twig above, and to the right is seen the actual separation—the leaf falls and there appears the leaf scar.

Examine now the small patch left on the twig by the departed leaf. For this purpose a pocket magnifier is handy, but not always essential except on the more slender twigs. What

a strange, grotesque thing this so-called leaf scar often proves to be. If you will look at a number of different kinds of twigs—butternut, ash, maple—it will soon be apparent that each is typical and entirely unlike that of any other. In fact, you will make the discovery that twig identification is a fascinating hobby, and that it is as sure a way as any for recognizing your tree friends of the forest and woodlot. A mixed thicket of young trees can no longer be thought of as "brush" when the twigs of each species are so distinctly different.

Tulip poplar bud, natural size; interior enlarged to show miniature, folded leaf and inner scales.

Some leaf scars are large and conspicuous like those of butternut, hickory, ash and catalpa, while others are not so evident and are often narrow and sometimes U or V-shaped, as the maple, dogwood and viburnum. Somewhere on the surface of the leaf scar is usually visible one or more tiny dots which mark the ends of slender conducting strands passing originally from twig to leaf—channels for the transfer of sap and leaf-manufactured food. These small dots—bundle scars they are called—are usually arranged in a more or less definite fashion, each kind of tree showing a characteristic pattern.

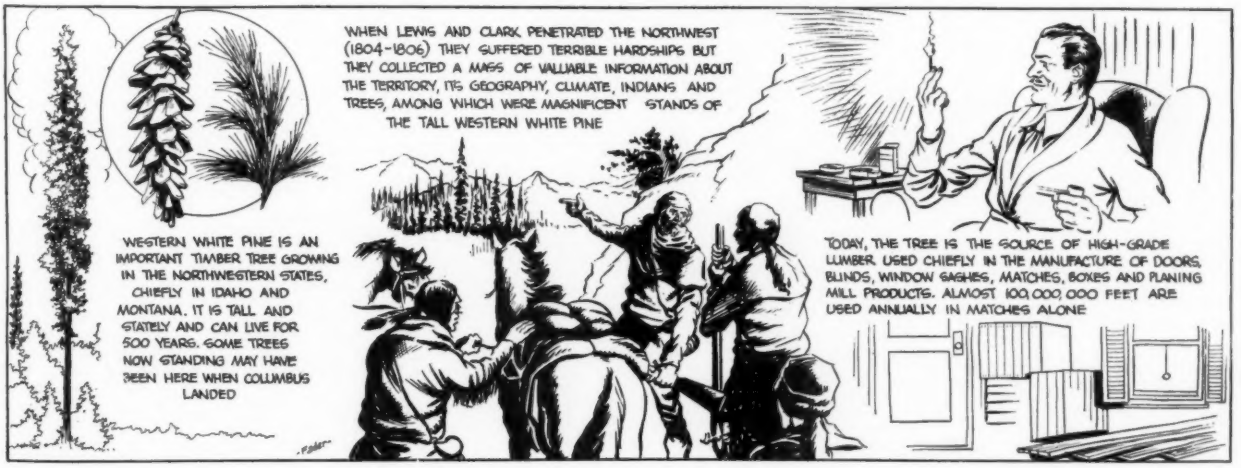
Enlarged leaf scar of butternut; the three U-shaped patches are bundle scars.

But even more conspicuous than the leaf scars are the winter buds. If the tree is a tulip popular, for instance, the bud will have two somewhat waxy outer scales. When one of these is folded downward, there is revealed what seems to be a smaller green bud of the same sort, and folded tightly against it is a perfectly formed miniature leaf, which, except for size, is exactly like those which a short while ago left the tree bare. If curiosity prompts further exploration, the inner greenish bud will yield upon dissection another tiny leaf and still another small bud, which in turn contains a smaller replica of those before.

By this time, it is clear that the bud is little more than an undeveloped branch with leaves attached, wrapped in a series of woolly or waxy blankets known as scales, and only waiting for the return of warm spring weather to open and resume its *(Continuing on page 94)*

TREES AND THEIR USES

No. 2 - - - WESTERN WHITE PINE


WESTERN WHITE PINE IS AN IMPORTANT TIMBER TREE GROWING IN THE NORTHWESTERN STATES, CHIEFLY IN IDAHO AND MONTANA. IT IS TALL AND STATELY AND CAN LIVE FOR 500 YEARS. SOME TREES NOW STANDING MAY HAVE BEEN HERE WHEN COLUMBUS LANDED
WHEN LEWIS AND CLARK PENETRATED THE NORTHWEST (1804-1806) THEY SUFFERED TERRIBLE HARDSHIPS BUT THEY COLLECTED A MASS OF VALUABLE INFORMATION ABOUT THE TERRITORY, ITS GEOGRAPHY, CLIMATE, INDIANS AND TREES, AMONG WHICH WERE MAGNIFICENT STANDS OF THE TALL WESTERN WHITE PINE
TODAY, THE TREE IS THE SOURCE OF HIGH-GRADE LUMBER USED CHIEFLY IN THE MANUFACTURE OF DOORS, BLINDS, WINDOW SASHES, MATCHES, BOXES AND PLANING MILL PRODUCTS. ALMOST 100,000,000 FEET ARE USED ANNUALLY IN MATCHES ALONE

WESTERN WHITE PINE

Pinus monticola. Douglas

The tall shaft of western white pine reaches heights of one hundred feet or more and supports a narrow, symmetrical, pyramidal crown of short drooping branches. This open grown tree has an unusually long crown. Frequently, more than half of the trunk is clear.

WESTERN white pine—the silver pine of the northwest, is native to the region from southern British Columbia across northern Idaho, Montana and Washington, southward through Oregon into California. True to its name, *monticola*, it is confined to the mountains, where in Idaho and Montana it is found at elevations of 2,000 to 5,000 feet above sea level, somewhat higher in Washington and Oregon and up to 10,000 feet in California.

Ranking among the important timber trees of America, western white pine frequently grows in dense stands and develops a tall, slender shaft with a peculiarly short-branched, narrow, symmetrical crown. The trunk is usually clear for a half to two-thirds of its length, has little taper and the slender drooping branches seldom extend more than twelve to fifteen feet. These trees may reach heights of 175 feet and be eight feet in diameter at breast height, but they are more often ninety to 110 feet high and two to three feet in diameter. Rapid growth is combined with long life, for trees of 200 to 500 years are not uncommon.

The silvery-gray bark sometimes takes on a tone of purple and is broken into small oblong or rectangular blocks. Trees exposed to the wind become distinctly cinnamon in color. Even on mature trees the bark is seldom over one and one-quarter inches thick, while that of young trees and branches is thin, smooth and bright gray. Very young twigs and shoots are covered with a fine reddish down, which helps distinguish this tree from other white pines.

The pale bluish-green leaves or needles are two to four inches long, commonly with a white, frosty appearance and are borne in bundles of five. They differ from the needles of the northern white pine in being thicker and more rigid. They persist on the twigs for three or four years or even longer.

The yellow pollen bearing, staminate flowers or catkins are borne during early spring in clusters of six or seven on the lower branches, while near the ends of the high branches are pale purple pistillate flowers on long stalks. From these higher blossoms develop green or dark purple cones which first stand erect and become pendulous by the close of the first season. By the end of the second summer they turn a yellow-brown and mature to a length of six to ten inches—or occasionally eighteen inches. The slightly curved cones are longer than those of northern white pine and so slender as to give rise to the name "Finger-cone Pine." Trees seldom bear fertile cones before forty to sixty years of age, and then infrequently at intervals of two or more years. Under each cone scale may be found two pale red-brown seeds about a third of an inch long attached to a narrow membranous wing from three-quarters of an inch to an inch long. The seeds are shed in September and October soon after the cones ripen and may be carried by the wind several hundred feet from the parent tree. Buried in the duff and well shaded the seeds retain their vitality several years. Over most of its range the tree reproduces sparingly and the seeds germinate best on exposed moist mineral soil, or on humus which keeps moist through the growing season. Many of the existing stands of white pine came into being as even-aged forests following the forest fires of 1889 and 1910, from seeds stored in the duff or released from cones that escaped de-

struction. Seedlings and young trees will endure shade, but as the tree becomes older more and more sunlight is demanded.

The pale brown to nearly white wood weighs only twenty-four to thirty pounds to the cubic foot, is straight-grained and easily worked. Although not strong, it is harder and stronger than northern white pine and for many purposes compares favorably with cypress, any of the spruces and Douglas fir. Its high commercial value is attested by the fact that among the species with which it is associated few command a higher price. With an estimated total stand of nearly twenty billion board feet of merchantable timber growing on some three million acres, the total cut in 1933 was 295,836,000 board feet. The peak of production for western white pine was reached in 1930 when 538,607,000 board feet were cut. This dropped rapidly until the production in 1932 was only 235,149,000 board feet. Idaho has over 13,500,000,000 board feet and Montana nearly 1,500,000,000 board feet. These two States with Washington and Oregon are the chief sources of the species. Stands of 20,000 to 40,000 board feet to the acre are not uncommon, while a large area in Idaho yielded 40,000 board feet to the acre at 100 years of age, and another area about 150 years old cut 51,000 board feet to the acre. It is used widely for structural purposes, window and door frames, molding, matches and pattern stock.

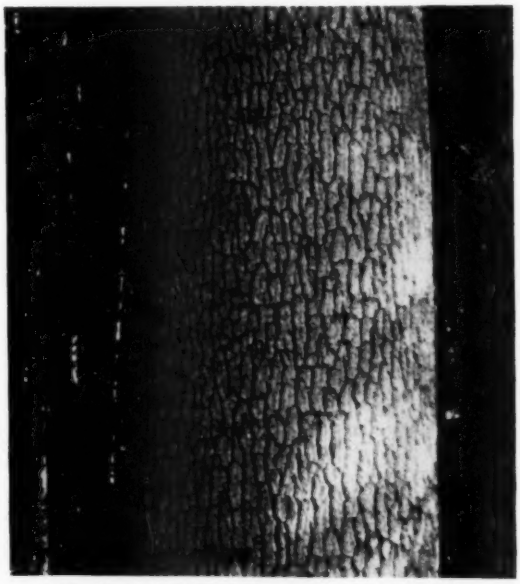
Western white pine develops greatest size and highest economic importance in deep porous soils on gentle north slopes and flats in northern Idaho and Montana. It seldom grows in pure stands and is most frequently associated with western hemlock, Douglas fir, the several western firs and lodgepole pine. Deep snowfall, a mean annual precipitation of fifteen inches in California to sixty inches near Puget Sound, and a comparatively short growing season characterize the regions where this pine grows.

While subject to disastrous losses from fire, protection against which is essential, its most dangerous enemy is the white pine blister rust. This fungus disease, first reported on the west coast in 1910, has made serious inroads upon scattered stands of young growth as far south as California. The fungus must find opportunity to live for a period upon the leaves of currant and gooseberry bushes before going over to the white pines, and cannot live where either the white pine or currant-gooseberry hosts are absent. Accordingly vigorous efforts are being made by the Federal Government, supported by the states and private land owners, to control the disease by destroying all the bushes in localities where the white pine is of commercial value.

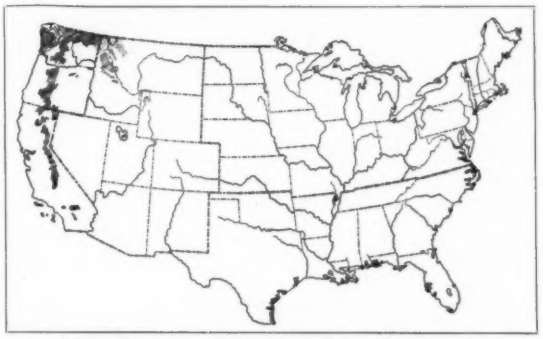
The mountain pine bark beetle, *Dendroctonus monticolae,* is the principal insect enemy and causes losses amounting to thousands of dollars each year. Control can be secured by felling the infected trees, peeling the bark and burning it. It is subject also to other pests common to northern white pine, but no others are of special significance in its natural range.

David Douglas, the Scottish explorer and botanist, first reported western white pine on the slopes of Mount St. Helens in Washington in 1825. Soon after, seeds were sent to England where the tree grows successfully. Because of its extreme hardiness, attractive color, compact pyramidal form and rapid growth during the first years, it is highly desirable for ornamental purposes. Not only is it widely used on estates and home grounds in the northwestern states, but it has proved hardy in New York State, Massachusetts and as far north as Ottawa, Ontario.

Pale bluish green needles in bunches of five and slender, cylindrical cones six to ten inches long are characteristic features of this pine.



The bark is sharply broken into rectangular blocks and may vary from silvery-gray to a grayish purple, or a rich cinnamon color.



Natural range of western white pine in the United States.

AROUND THE STATES
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Importation of Elm Logs Prohibited

A revision of the Dutch Elm Disease Quarantine No. 70, as announced by Secretary of Agriculture Wallace, prohibits the importation from Europe of all logs of elm and its relatives as a further step in the warfare against the Dutch Elm Disease.

As originally drawn, this quarantine permitted the entry from Europe of elm burl logs, used for making a type of furniture veneer, provided the logs were free from all bark and wood-infesting insects at time of arrival and were given a prescribed hot-water treatment before they were released. In some cases, however, the adhering remnants of bark have been found to be infested by living adults and larvae of scolytid beetles, known to have a part in spreading the fungus causing the Dutch elm disease, and officials feel that the only safe course to adopt in the fight against the disease is one of complete exclusion of these logs. The revised quarantine became effective January 1 of this year.

Power Project in Quetico-Superior Vigorously Protested

The Pigeon River Lumber Company's application for a preliminary permit to erect seven power dams on the Pigeon River extending along the international boundary between Ontario and Minnesota met a volume of protests based on two Federal Acts and one of the State of Minnesota during the public hearings before the Federal Power Commission on January 15. The Commission, after hearing objections based on the Shipstead-Nolan Act of July 10, 1930, and the Wheeler-Howard Act of June 18, 1934, reserved for further consideration the question of whether it has jurisdiction over the area and gave the applicant and the opposition ten days in which to file briefs.

Senator Henrik Shipstead, sponsor of the Shipstead-Nolan Act, which withdrew from entry some 2,000,000 acres of public lands including the Superior National Forest in northern Minnesota, appeared before the Commission and urged disapproval of the application. In addition to restricting logging on all public lands within four hundred feet of the shore line of lakes and rivers within the area the Act places upon Congress the responsibility for authorizing any structures which will permanently change the water level of any lakes or streams bordering upon public lands within the area.

Representative Theodore Christianson, former Governor of Minnesota, declared that public sentiment as expressed by the people of Minnesota is unalterably opposed to the project not only because of existing law but because erection of the dams and the impounding of large areas of water would endanger the recreational values of the region. These, he believes, far outweigh any values which might accrue from the production of water power. He was supported in his opposition to the construction of dams by Representatives R. T. Buckler and Paul J. Kvale.

The fact that the dams would flood approximately a section of Indian-owned land brought a protest from the Indians, voiced by William Zimmerman, Jr., Assistant Commissioner of the Bureau of Indian Affairs, on the ground that the Wheeler-Howard Act places final jurisdiction in such cases with the Secretary of the Interior.

Any action by the Federal Power Commission which might lead to the erection of dams in the area, was protested by Assistant Attorney General M. N. Orfield, who referred to the Minnesota law of April 22, 1933, designed to protect and preserve the shore lines of all lakes and streams within the region. This, according to the Attorney General, specifically prohibits building dams or raising their level within the area. Accordingly, he said, "The Commission cannot now set aside an area for private purposes, because this area has already been set aside for a public use."

Ralph M. Bashore, who assumed office as Secretary of the Pennsylvania Department of Forests and Waters on January 15th.

Opposition to the construction of these dams which are estimated would cost in the neighborhood of $2,500,000 and which would develop some 40,000 horse power, was led by Sewell T. Tyng, a member of the Quetico-Superior Council and Secretary of the Quetico-Superior Committee, appointed by President Roosevelt on June 30, 1934. G. H. Collingwood, Forester for The American Forestry Association, presented for consideration of the Commission an opinion expressed on the floor of the House of Representatives in 1930, when the Shipstead-Nolan bill was under discussion, by Representative Scott Leavitt of Montana, who declared, "That before permits can be granted to do any more than construct strictly temporary dams, necessary for legitimate logging operations, the Congress itself must act. It takes away from the Water Power Commission or any other agency of this nation the right to grant such permits as would allow the permanent raising of those water levels to the destruction of the shore line until the Congress itself acts in the matter, and decides itself what thing should be done in the public interest."

Public representatives who appeared in opposition to the application of the Pigeon River Lumber Company included Seth Gordon, President, American Game Association, and Dr. T. S. Palmer, representing the American Civic Association.

Land Planners Would Turn Farms into Forests

Withdrawal of 75,000,000 acres of farm land, comprising 450,000 farms, from arable farming, is recommended by the Land Planning Committee of the National Resources Board in a report made public January 11. The purpose of this recommendation is to promote the conservation of natural and human resources of the nation. Of the 75 000-000 acres which the Committee has in mind, 25.000,000 are crop lands, 35,000.000 pasture and 25,000,000 forest and woodlands. The Committee suggests that this land be added to the National Forests or leased to states for administration as wildlife refuges, parks and other public reservations.

The Land Planning Committee's report formed the basis for the recommendations of the National Resources Board, recently issued. Reversal of the traditional method of land development is advocated by the Committee. Instead of developing and exploiting land as rapidly as possible, as has been the rule heretofore, the Committee recommends development of a public policy aimed at effecting such ownership and use of land as will best subserve general welfare rather than mere private advantage.

One of the major problems considered by the Committee's report is that of land settlement. It is futile, the report states, to undertake retirement of poor land and at the same time permit settlement of areas equally unsuited for farming. Among the remedial lines of action proposed are: withdrawal from homestead entry all lands unsuited for occupancy, action by the states to prevent settlement of unsuitable areas, state zoning along the lines now being initiated in Wisconsin, modification by the states of their grants in aid of education and roads so as not to stimulate unwarranted land settlement.

The Committee's report is a summation of a much larger report which it states "represents the most comprehensive body of information on land utilization and policy which has yet been brought together in this country." The summary report covers broadly the present problem of surface uses of land.

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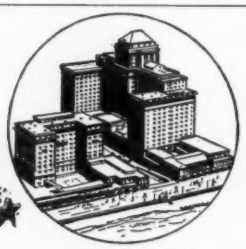

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MISSISSIPPI VALLEY COMMITTEE REPORTS FINDINGS

Eminent Group Stresses Improvement of Human Life in Planned Use of Natural Resources

"Make no little plans. They have no magic to stir men's souls."

With this quotation as an introductory keynote the Mississippi Valley Committee, appointed a year ago by President Roosevelt to study the nation's greatest river system, released on December 26 its 230 page report sketching the essential features of a master plan designed to improve human life in the Mississippi drainage basin where forty-nine million people, or almost one-half the country's population, now reside.

The report is an exhaustive and enlightening treatise on the relationship of land, water and people with special application to conditions existing in the vast region embraced in the Mississippi River system. It is the work of a group of eminent scientists and technicians, each an authority in his respective field. The personnel of the Committee includes: Morris L. Cooke, Chairman, Harlan H. Barrows, Herbert S. Crocker, Colonel Glen E. Edgerton, Colonel Henry S. Graves, Major-General Edward M. Markham, Charles H. Paul, Harlow S. Person and Sherman M. Woodward. Upon completion of the Mississippi River study the Committee was reconstituted by the President as the Technical Committee on Water of the National Resources Board, whose recently released report was reviewed in the January issue of AMERICAN FORESTS and is further commented on by Henry S. Graves in this issue.

While created to study water conditions and to recommend policies and plans for the use and control of water in the Mississippi Valley, the Committee's report deals with other natural resources of the area as they integrate in the broad problem of water control. "Planning for the use and control of water," the Committee points out in an introductory note, "is planning for most of the basic functions of the life of the nation. We cannot plan for water unless we also consider the relevant problems of the land. We cannot plan for water and land unless we plan for the whole people. It is of little use to control rivers unless we also master the conditions which make for the security and freedom of human life. * * * The need for planning arises out of the needs and desires of the people. Under the proven system of democracy no plan can be imposed upon the people. Government may inform, educate and guide. It may mobilize resources for the common task. It cannot dictate. What must be sought is effective means for carrying out the common purpose, not only in the interest of the living generation but for the protection and enhancement of the lives of all the generations to come."

Flood control, low water control, navigation, power, water supply, sanitation and erosion are all dealt with exhaustively as integral parts of the diversified task of using and controlling waters. Their planned use, the Committee asserts, cannot, however, be developed even into a single, sound project "unless we study also the uses of land. So we have other factors we cannot overlook; agriculture and irrigation, industry and commerce, water storage, forestry, recreation, the conservation of wildlife. * * *

"Engineering does not exist for its own sake. It is of little use to control rivers if we cannot thereby improve the quality of human living. Therefore the final and most significant element which the Committee has considered is neither land nor water but the people who live on the land and are dependent on the water."

With this approach, the Committee's report charts a plan on a scale to challenge the imagination for the coordinated use and development of the resources of the Mississippi Valley, embracing all or parts of thirty-one states. The principles upon which the planned use of water control and public works for the Mississippi watershed are based are recommended for the country as a whole. While the Mississippi River in all its reaches forms the basis of the master plan, the major tributaries of the river are dealt with as projects forming essential parts of the whole planning picture.

From a practical standpoint the Committee states the three points of attack on the problems involved are, first, a better adjustment to water on the land at the time of precipitation, by farm and forestry practices which retard rapid run-off and erosion and promote the infiltration of waters in the soil; second, by works of different kinds designed to eliminate and reduce the extensive variations of stream flow and their harmful effects; and, third, treatment of sewage, industrial mine and other wastes to eliminate pollution of waters necessary for domestic, industrial and recreational uses.

The United States is not realizing full benefits from its water resources, the Committee asserts. The quality of pure water in streams and underground stores so necessary for domestic consumption is diminishing and stream pollution is reaching serious proportions. Erosion is washing away the rich agricultural top soils at a serious rate. The possibilities of electric power have only been tapped and the fuller use of water for recreation awaits development.

During the next twenty years the Federal Government could profitably spend a billion dollars on river works in the Mississippi valley, the Committee believes. Fifty per cent of this expenditure would be self-liquidating. Such a program would need to be flexible in order to provide for next steps, and economic and engineering studies to determine the order of projects on the basis of local need and general benefit. A flexible program of public works relating to the use and control of waters, the Committee holds, would in the long run contribute to industrial stability and the balancing of employment in both good times and bad.

Cooperation between the Federal Government and the states is an essential factor in such planning. "Any coordinated system of control will demand the cooperation of neighboring states with each other as well as the cooperation of the states with the Federal Government," the Committee holds. "Obviously the Federal Government should share the cost and the responsibility. Obviously, too, the states should do the same. To make this easily possible we need unified state flood control laws, federal legislation to expedite interstate compacts and a permanent policy of federal participation based upon accurate estimates of the benefits to be derived."

Some of the essential steps in the Committee's Mississippi plan are: employment of all methods of controlling floods, including channel improvements, levees and floodways, reforestation, erosion control and construction of retarding reservoirs; unification through federal control of the electricity supply and the development of electricity in connection with

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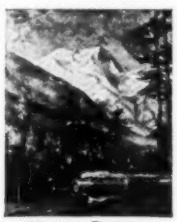
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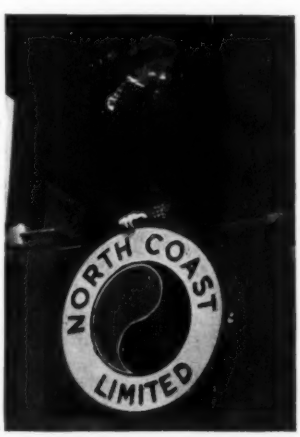

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dams built as aids to navigation or flood control; a widespread extension of rural electrification; completion of navigation facilities on the Mississippi River proper and connections with the Great Lakes; extension of navigation on tributaries as economic possibilities merit; the unification of all forms of transportation as parts of a coordinated plan; a program of balanced land use with certain land designated as protection areas; cooperation with states in the promotion of rural land zoning; allocation of land use, forestation and restoration of grass crops; protection of top soils on public lands through effective fire prevention and regulation of grazing.

Asserting that private ownership of forest lands has broken down in the United States, the Committee would increase public holdings of forests in the valley region. "Forests have an important part to play in erosion control, in protecting the slopes on drainage areas, in the problems of agriculture, in recreation and in the conservation of wildlife," the Committee holds. "National planning in forestry should go hand in hand with planning in these other fields."

The mere acquisition of public forests, according to the Committee, is not enough. "Cooperative protection from fires, insects and diseases; scientific planting programs, erosion control; more equitable systems of taxation, public credit for the improvement of private lands; continuing research; and a general economic survey of forests should be parts of a national forest program.

"A permanent policy of regulation for privately owned forests, embodying some of the provisions of the N. R. A. Lumber Code, should be adopted. In return for public assistance of the nature described private owners may justly be required to maintain their holdings with due regard to the public interests."

A national recreation policy, adapted to the Mississippi Valley but applicable everywhere, the Committee asserts, should include a comprehensive examination of all recreational problems and areas; a definite distribution of responsibility between the federal and other government agencies and private interests; coordination of federal activities relating to recreation, the extension of wilderness areas, the recognition of recreation as a motive for acquiring new federal lands not suitable for National Parks or National Forests, provisions for new National Parks where proper standards can be met and more liberal appropriations for recreation in National Forests and National Parks.

The Committee's recommendations for a wildlife program include the acquisition of refuges and preserves; larger appropriations for conservation activities, common action of all water-use agencies with the Biological Survey to protect migratory waterfowl; an enlarged research program; education; leadership in suppressing diseases and other dangers to wildlife; and other financial support for the protection of inland fisheries.

Three specific projects of water control and land reconstruction are emphasized by the Committee as demanding immediate action. They embrace the Yazoo Basin, the St. Francis Basin, and the Black River Basin. The Committee recommends that study for the development of these areas be commenced at once, declaring that the time is ripe to initiate "a new, more comprehensive and enlightened system of land reclamation and community planning designed to secure ultimately to the settlers an improved standard of living."

COLONEL GEORGE P. AHERN HONORED

Colonel George P. Ahern, pioneer forester, progressive, and former private secretary to Sitting Bull, was presented with a book of good-will messages from a host of friends and associates, on the occasion of his seventy-fifth birthday, December 29. F. A. Silcox, Chief of the Forest Service, made the presentation.

Col. George P. Ahern

The volume contained greetings from many of Colonel Ahern's old friends, including former Secretary of War Newton D. Baker, Governor Gifford Pinchot, of Pennsylvania, Major General James G. Harbord, John Collier, Commissioner of Indian Affairs, and many members of the Forest Service.

Colonel Ahern's long public career began in 1870, his eleventh year, when he landed in Tombs Prison, New York City, as the result of a boyish crusade on behalf of some forgotten cause. The son of a pioneer in the New York labor movement, he formed early the habit of associating himself with various liberal activities. After his graduation from West Point, in 1882, he was appointed secretary to Sitting Bull, who was then a government ward and the recipient of international sympathy somewhat akin to that now accorded Mahatma Gandhi. Sitting Bull was able to read French, German and English, but inasmuch as his mail amounted to some 1,000 letters a day, he had to have assistance in looking after it.

After winning a law degree at Yale University, Colonel Ahern became professor of military tactics at Montana Agricultural College. While there, he founded and taught the first forestry course ever to be given in the United States. He has been a friend of the country's forests and its foresters ever since, from Gifford Pinchot down to the present Chief Forester, Ferdinand Silcox.

In 1890 Colonel Ahern made extensive explorations in wild, uncharted areas of Montana—never before traveled by white men, but which were later included in the territory mapped as Glacier National Park.

Colonel Ahern was himself head of the Philippine Forest Service and is the author of two books, *Deforested America* and *Forest Bankruptcy in America.* He was decorated for bravery in the Spanish-American War and was secretary of the Army War College during the World War.

Forestry Questions Submitted to The American Forestry Association, 1713 K St., N. W., Washington, D. C., will be Answered in this Column. . . . . A self-Addressed Stamped Envelope Accompanying Your Letter will Assure a Reply.

✣ ✣ ✣

QUESTION: How can I treat cones or wood so as to produce colored flames when burned in an open fire?—C. L. F., Washington, D. C.

ANSWER: For blue flames dissolve two pounds of copper sulphate (blue vitriol) in one gallon of water. Place the cones in a square of coarse cheese cloth. Gather up as in a bag and immerse them in the fluid for three to five minutes, remove and spread out to dry. Care should be taken to avoid dipping one's bare hands into the solution.

For flames of other colors dissolve the following chemicals in one gallon of water and follow the same instructions:

Purple flames, use two pounds potassium permanganate.

Green flames, use two pounds boric acid.

Red flames, use one-fourth pound lithium chloride or two pounds strontium nitrate.

Yellow flames, use two pounds sodium chloride (common salt).

QUESTION: What can I as a private citizen do to protect my elm trees?—W. F. S., Massachusetts.

ANSWER: In view of the fact that European elm bark beetle, which is the only recognized means of spreading the disease from tree to tree, burrows in the bark and outer wood of dead or sickly elm trees, limbs or logs, the following suggestions have been made for all owners of elm trees:

Cut and destroy all dead elm trees.

Cut and destroy all sickly elm trees if they are not worth an attempt to restore to vigor by feeding and trimming.

Prune all elm trees, removing and destroying all dead wood.

Spray elm trees. Trees are weakened by attacks of the canker worm and elm leaf beetle and spraying will control these insects. Spraying for their control may possibly assist in control of the elm bark beetle, a carrier of the Dutch Elm Disease.

QUESTION: What is the food value of a pound of walnut meats as compared with an equal weight of some standard foods?—J. M. P., Pennsylvania.

ANSWER: According to an article in the Department of Agriculture Year Book for 1906, a pound of English walnut meats contains 3,075 calories, of which 60.7 per cent is fat materials and 13.07 per cent sugar and starch materials, while a pound of butternut meats contains 3,370 calories with 61.2 per cent fat materials. In comparison, a pound of round steak contains 950 calories and is 13.6 per cent fat; a pound of Chedder cheese contains 2,145 calories and is 36.8 per cent fat; a pound of boiled eggs contains 680 calories with 10.7 per cent fat.

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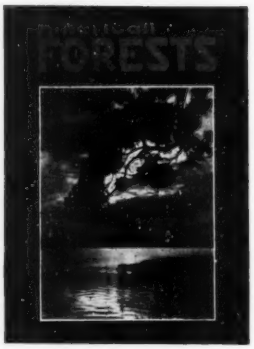

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February, 1935

C. C. C. WORK VALUED AT $292,000,000

A valuation of $292,000,000 was placed on the work of the Civilian Conservation Corps during the eighteen months' period ending September 30, according to Robert Fechner, Director of Emergency Conservation Work. This is more than sixty per cent of the total amount—$475,000,000—expended for the maintenance of the Corps during this period.

This valuation was reported by the cooperating departments as follows: Department of Agriculture, $224,000,000; Department of Interior, $64,000,000; Department of War, $4,000,000. It is based upon the complete record of all the forest and park conservation, improvement and protection work done by the 350,000 members of the Corps during the eighteen-months' period.

This report discloses that through September 30 the C.C.C. had built 41,582 miles of truck trails through the forests, laid 25,089 miles of telephone lines through forest and park lands, opened up 27,898 miles of fire breaks through timbered areas, and reduced fire hazards over 825,808 acres of timbered lands. Members of the Corps spent 1,605,000 man-days fighting fire, planted 204,000,000 trees, improved 1,392,000 acres of timber stands through removal of obstructions and the thinning out of undesirable trees, covered 2,922,000 acres in a drive to reduce timber losses caused by insect pests, carried on campaigns against tree attacking diseases over 2,657,000 acres, and conducted control operations against rodents over 9,672,782 acres. They developed better recreational facilities over tens of thousands of acres of National Forest, state forest and park, and National Park lands, constructed 778,000 soil erosion prevention dams and completed a substantial amount of other types of work including flood control, timber surveying, construction of lookout houses and fire towers, rodent control operations and wild life conservation.

The Emergency Conservation Work program, through the allocation of $20,000,000 for land purchases made possible the acquisition of millions of acres of new National Forest and National Park lands. Through September 30, $17,992,424, of this $20,000,000 had been obligated. The acreages acquired included additions to the National Forests amounting to 4,892,804 acres and additions to the National Parks amounting to 67,100 acres.

In addition to the federal lands acquired, the Emergency Conservation Work program stimulated the acquisition of lands by the states. The National Resources Board recently reported to Director Fechner that since the Emergency Conservation Work program began, the states have added close to 400,000 acres to their park areas.

NATIONAL FORESTS PROVIDE 26,000,000 MAN-DAYS OF WORK IN 1934

Picturing the forest lands of the nation a huge employment reservoir capable of contributing in large measure to permanent employment and support of communities, F. A. Silcox, Chief Forester, in the annual report of the Forest Service, stated that more than 26,000,000 man-days of work were provided in 1934 in the National Forests of the country.

Carefully made plans, he said, indicate the need for at least 20,000,000 man-days of work annually on the National Forests for an indefinite period. The need is far greater, proportionately, he said, on forest lands in private ownership, which constitute three-fourths of the country's total forest area.

"Sound economics requires that forest or potential forest land be so managed that it may permanently support its fair share of the nation's population," Mr. Silcox said. "To accomplish it, lands must be kept productive and forest resources managed as crops, on sustained yield basis, rather than as mines. This is a long-time job; one that calls for national planning and involves the problem of privately owned lands. These private lands have furnished ninety-eight per cent of our annual cut of forest products and—logged with no regard to the future—a great proportion of them will be in no condition to yield new timber crops for decades.

The task, Mr. Silcox said, calls for rebuilding much of our forest empire, and for improving and developing still more of it. This is both possible and feasible, he believes, "and once this task is accomplished, forests can support many more people than they now do; forest capital will be secure rather than insecure; forest industries stable instead of unstable; permanence rather than enforced migrations may characterize the lives of families; whole communities can then depend upon a continuous supply of forest products."

In this rebuilding and improving lies an unparalleled opportunity, he stated. By means of such work, forest properties will become added sources of labor employment and of supplies; the doing of it will aid in the immediate national effort for relief; social and economic reconstruction will be forwarded. From this huge work reservoir, old jobs may be replaced by new.

As indicative of future possibilities, the Chief Forester pointed out that in normal times forest work and the sale and distribution of products gave full-time employment to 2,000,000 people, and 2,500,000 farmers obtained supplemental cash incomes from forest lands.

"All forest lands," he said, "unquestionably constitute a reservoir of non-competitive work which can go far in helping to solve immediate problems of relief, reconstruction, and rehabilitation. Such work is, moreover, essential if one-third of our total land area is not to be handled on a suicidal basis."

A total of 4,206,560 acres of forest land was acquired or optioned by the Federal Government for National Forest purposes during the last fiscal year. Accelerated progress in public forest acquisition is being continued in the current year, largely in the eastern, southern and Lake States regions.

Large accomplishments in forest rehabilitation and improvement were made possible through the C.C.C., Public Works, Civil Works, and Transient Relief programs. Work done included timber stand improvement, reforestation, insect and disease control, fire hazard reduction and fire protection improvements, control of soil erosion as a means of flood prevention, recreational improvement and creation of more favorable conditions for fish and wildlife, the report stated. The work was carried on on National Forests, state forests, private forest lands as authorized by the Clarke-McNary Act, and private lands on which erosion control was authorized by the Emergency Conservation Act. The Forest Service planned and supervised eighty per cent of all C.C.C. work projects.

The Forest Service during the year set up a skeleton organization to provide cooperative inspection of woods operations and technical advice in the enforcement of woods-practice rules under the Lumber Code.

Seek Commission to Control Stream Pollution

Creation of a watershed commission which would control stream pollution under broad powers, conferred upon it by the Federal Government and by the states, was the main proposal of the national conference on stream pollution held in Washington, D. C., on December 6. This proposal, along with others, will be placed before the President and Congress, according to Senator Augustine Lonergan, of Connecticut, leader of the movement.

The conference, bringing together more than twenty national experts and leaders in the movement, met with Secretary of War George H. Dern, whose department has control over all Federal expenditures in connection with rivers and harbors.

The proposal to be submitted to the President and to Congress, it was learned, will seek the establishment of a governmental authority with jurisdiction over all coastal waters and all of the inter-state and navigable streams and their respective tributaries. This authority, consisting of from five to ten members with terms of six years each, would have power to employ technical experts to examine, survey, and report conditions, and to be the authority which ultimately decides disputes that may arise in the states.

The federal authority would have power to appoint local authorities for every river which flows into the sea, its jurisdiction to extend to and include all tributaries flowing directly or indirectly into the river from source to mouth. It was suggested that in view of the immensity of the Mississippi watershed, it might be divided into separate watersheds.

These local authorities would be given absolute power to supervise and control the purity of water, to enforce laws and regulations, to fix standards of purity with the approval of the Federal authority.

The following sub-committee was appointed by Senator Lonergan to draft a national program and make recommendations for its application in the interests "of public health, navigation, wildlife and industrial development:"

Secretary of War Dern; Dr. M. M. Ellis, United States Bureau of Fisheries; R. E. Tarbett, Public Health Service; Thorndike Saville, National Resources Board; General S. H. Wadhams, Director, State Water Commission of Connecticut; Grover C. Ladner, Chairman of the Water Committee, Conservation Council of Pennsylvania, and Dr. D'Arcy Magee, national Vice-president of the Izaak Walton League of America.

New York City to Have Bird Sanctuary

Nine acres of natural woodland on the Bronx River, between the new Thompson Memorial Rock Garden and the large Iris Plantation in the New York Botanical Garden are to be converted into a bird sanctuary early in the spring, according to an announcement by the New York Tree and Bird Club. This tract has been put at the disposal of the Club with the provision that it be enclosed by a fence, and in addition to providing shelter for all migratory and local birds, one of the main purposes of the sanctuary will be to encourage the collection and preservation of wild flowers and trees.

The Club is now sending out pleas for new memberships and for additional funds to help in constructing the fence. The sanctuary at the Botanical Garden is to be made a memorial to Mrs. Nathaniel Lord Britten, wife of the founder and former director of the institution and herself an ardent worker.

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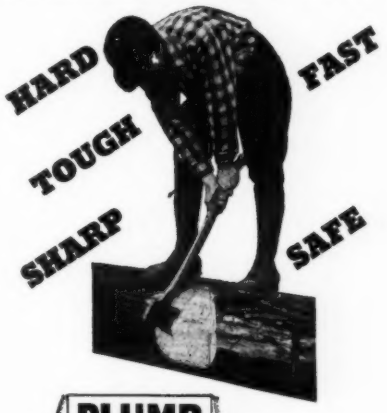

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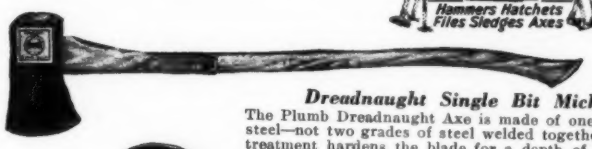

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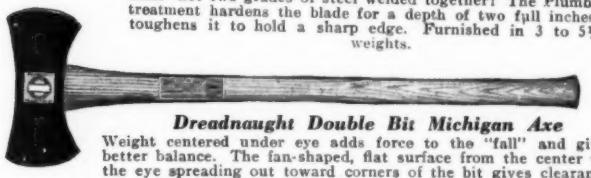

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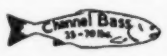

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LUMBER CODE MINIMUM PRICES SUSPENDED

Immediate suspension of all orders establishing minimum prices under the Lumber Code was ordered by the National Industrial Recovery Board on December 22. While sustaining all orders relative to fixing prices of lumber and lumber products, the Research and Planning Division of the Recovery Board was ordered to continue the study of prices at which lumber and timber products are sold or offered for sale and to advise the National Industrial Recovery Board whenever destructive price cutting exists.

While there are many who believe this order is in line with the policy of the board to end price fixing as soon as possible, it contained a clause giving the board power to resume price fixing upon any item or items if they find the existence of destructive price cutting. This is informally defined by the National Recovery Administration as price cutting which tends to destroy the market, promote bankruptcies and which does not permit the effectuation of the purposes of the National Industrial Administration.

The action was taken after public hearings on December 11, 12 and 13, which were called on petition of the West Coast Lumber Manufacturers Association that price provisions be eliminated in the West Coast Division. The meeting was more largely attended than any since the inception of the Lumber Code and apparently convinced the National Industrial Recovery Board that it is impracticable either to enforce prices in major divisions of the industry which are unwilling to operate under fixed prices, or to suspend prices in the cases of major divisions of the industry while other divisions are held to the maintenance of prices.

Major David T. Mason, Executive Officer of the Lumber Code Authority, commenting on the action of the board which he described as a "major operation," stated that the elimination of prices "is regarded as clearing up an impossible situation in some divisions and at the same time it brings a bitter disappointment to other divisions. While this action undoubtedly will create serious disturbance in the industry as a whole, every effort will be made by the leaders of the industry to minimize the difficulties and to restore order as promptly as practicable. National Recovery Administration has already taken steps, for all codes, designed to bring vigorous prosecution of hour and wage violation; at the same time we expect vigorous support from National Recovery Administration in maintaining production."

The action of the board was no doubt influenced by the recommendations of the National Recovery Administration Consumers Board summarized and presented at the public hearings by Dr. Constance Southworth on December 12 as follows:

> "Discontinuance of fixed minimum prices; gradual adjustment of production capacity to a basis of sustained lumber yield and operating efficiency; public acquisition of the forests as rapidly as may be feasible and strict Government control of over-cutting."

The final breakdown of price administration among the southern hardwood mills following the order by the Fisher Body Corporation for approximately fifty million feet of lumber at prices below those authorized by the Code was also a factor. This lumber order was divided among many hardwood producers, resulting in a wide variation of court decisions in several southern states.

DUTCH ELM DISEASE CONTROL PROGRESSES

A total of 1,773 infected, dead and dying elm trees within a radius of fifty or sixty miles of New York City had been cut and destroyed by January 5, according to a statement by the Bureau of Entomology and Plant Quarantine, which reported that the $527,000 Federal emergency allotment to control and prevent the spread of the Dutch elm disease was actually available for use on December 21, 1934. The work is being conducted as a Federal project and the force of 272 men employed on January 5 is being rapidly increased. Officials of the Bureau estimate that available funds for financing the removal of dead and dying elms will be exhausted about May 15. Before that time, Lee Strong, Chief of the Bureau, has indicated that careful surveys will be made to determine the progress of the disease and provide a basis for an estimate of the amounts necessary to complete the program of control.

Budget estimates for the coming year reveal a tentative appropriation of $261,156 *"to be immediately available"* for continuing this work. Reports of pathologists and others at the forest pest hearings of December 3, 4 and 5 were that this is wholly inadequate to complete the eradication of the disease.

The general public can assist in the control of this threat to America's elms, according to a recent statement by L. H. Worthley, in charge of the eradication work with headquarters at White Plains, New York, by keeping their own elms vigorous. While there is no data available to definitely indicate what effect the vitality of an elm has on the chances of its becoming infected or killed by the Dutch elm disease, there is a direct relationship between the low vitality of elms and their infestation by the bark beetles which are known carriers of the disease. Accordingly, elm tree owners are urged to spray and feed their trees. Also all dead and dying wood should be pruned and burned before May 1.

SECRETARY ICKES CALLS PUBLIC LAND CONFERENCES

Conferences to discuss the exchange and use of public lands as they may be affected by the grazing regulations of the Taylor Grazing Act of June 28, 1934, have been called by Secretary Ickes to be held in Denver, Colorado, during February, under the leadership of F. R. Carpenter, Director of Grazing.

Officials of state land boards and other officials interested in state lands in thirteen western states have been asked to meet on February 11 and 12. State Fish and Game Commissioners and other state officials interested in the protection of wildlife will confer on February 13 and 14, while the land commissioners of the land grant railroads and representatives of wagon road and other land grants will meet on February 15 and 16.

These conferences will follow similar conferences conducted during the past several months by Director Carpenter throughout the western states and will be in accordance with Secretary Ickes' desire that the preliminary organization of grazing administration be developed by states. As soon as this is completed and the land properly classified, the administration plans that the areas will be subdivided into small grazing districts with the establishment of local grazing administrations suitable to each particular region. Secretary Ickes has stated that local grazing districts should be given latitude in the administration of their respective areas.

A New Closed-Back Hand Shovel

With the advent of the C.C.C. huge quantities of axes, saws, shovels, picks and similar tools were immediately put into use. To meet a very definite demand a new shovel has been announced by the Wood Shovel and Tool Company which resembles the familiar hollow back type shovel, except that instead of the usual hollow in the back of the blade there is a steel plate welded securely to the blade and extending up the socket. By this construction, the one-piece steel blade is made smooth both front and back and yet permits the use of the tapered steel socket which is heat-treated to provide strength and springiness.

Wood-Peeling Machine

The Council Tool Company has developed and will soon be able to put into commercial production a three-ton Barking Machine capable of handling wood at the rate of five cords per hour. Power recommended for driving this equipment is a motor of from seven and one-half to ten H. P., although in many instances it has been found that where current is not available a small gas engine or an old automobile motor may easily be rigged up to supply the necessary power. This equipment offers great possibilities to manufacturers of sulphite pulp.

Ornamental Trees

Attractive and informative photographs supplemented with simple diagrams adorn the pages of a highly attractive booklet on "Ornamental Trees for Lawns, Estates, Streets and Parks," prepared by Jackson and Perkins Company, of Newark, New York. Trees illustrated and discussed include American Elm, Pin Oak, Norway Maple, Lombardy Poplar, Japanese Cherries and Dogwood.

New Instruments for Measuring Fire Danger

For several years forest protection agencies have felt the need for more reliable information from more localities of the physical factors which influence fire danger. Far too frequently important decisions have to be based on incomplete information about the fire danger. What is the relative humidity? How hard is the wind blowing? When did it rain last and how much rain fell? How dry are the fuels? These are some of the things a ranger or supervisor wants to know when he has to decide whether or not to send more men to a fire, hold a road crew near a telephone, or close an area to travel.

Instruments are now available for measuring some of these fire danger factors. However, existing instruments have been too expensive to permit equipping more than a few stations. To meet this need a complete set of inexpensive instruments has been designed and made at the Forest Experiment Station, Portland, Oregon. A complete installation includes the following:

Instrument Shelter—Made in sectional units and shipped unassembled. Door can be locked. Double roof of cedar. Strong enough to be left exposed on lookout points all winter. Fuel inflammability indicator scales are mounted inside shelter. Fan psychrometer also mounted inside. Additional space provided for hygrothermograph if this instrument is available.

Rain Gauge—Outer container made of galvanized iron; inner container made of seamless brass tubing. Rainfall magnified ten times. Measuring stick made from red gum, plainly marked with waterproof ink.

Fan Psychrometer—A friction-driven fan circulates air across stationary thermometers. The probability of accurate readings is increased greatly because the operator can constantly watch the wet bulb thermometer and obtain the lowest reading, because thermometer bulbs do not touch observer's hands, and because angle of sight to thermometer is constant. Frequent observations are more likely to be taken because measurements are easy to make. Breakage of thermometers is reduced to a minimum.

Fuel Inflammability Indicator — Specially prepared sections of wood known as "hazard indicator sticks" are exposed in the open on wire supports. Fuel inflammability is indicated in terms of the moisture content of these sticks of wood. Moisture content is obtained by weighing the sticks on special scales marked in moisture percentages.

Wind Velocity Gauge—Half cylinders of aluminum mounted on a pivot that revolves fast or slowly according to the speed of the wind. An electrical contact on a geared wheel sounds a buzzer when the cylinders have turned a certain number of times. Wind velocity is measured by counting the number of buzzes for two minutes and referring this count to a table sent with the instrument. The gauge will measure accurately wind movement as light as one and one-half miles per hour.

Wind Vane—An accurately balanced instrument with streamlined vane to give immediate response to changes in wind direction. Letters indicating the four cardinal directions make it easy to observe wind direction.

Forest Experiment Stations, of course, are not in the manufacturing business and do not have instruments to sell. The Portland Station, however, has found that these instruments cost very little. The big item is labor. Those chiefly responsible for designing and manufacturing the present set of equipment estimate that the instruments could be made in quantities at a price of about twenty-five dollars for the entire set, exclusive of the Instrument Shelter and the Haze Meter, which would probably cost less than ten dollars each.

Further information concerning any of the above products will be supplied in your self addressed stamped envelope mailed to American Forests, 1711 K Street, N. W., Washington, D. C.

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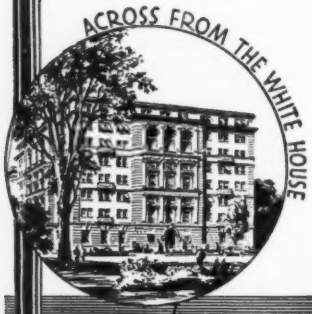

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SAMUEL N. SPRING, *Dean*

GREEN MOUNTAIN PARKWAY FAVORABLY REPORTED

A National Parkway extending from northern Massachusetts along a scenic route through the Green Mountains of Vermont to the Canadian border is envisioned in an engineers' report of the National Park Service made to Director Arno B. Cammerer early in January. The report is based upon a reconnaissance survey by landscape architects of the Park Service and road engineers of the Bureau of Public Roads. The survey was authorized a year ago by the appropriation of $50,000 of public works funds to study the feasibility and desirability of such a project.

The proposed project as favorably reported upon would call for the construction of a continuous highway north and south through the Green Mountains the entire length of the State of Vermont with a minimum right-of-way of 1,000 feet, thus allowing approximately 500 feet of forest and park land on either side of the road. In addition, the report provides a number of wilderness areas as part of the parkway and recommends the construction of a continuous foot trail and likewise a continuous bridle trail paralleling the roadway but out of sight of it in both instances. The plan also calls for the protection and improvement of the forest areas along the roadway so as gradually to restore the charm and beauty of the original forest and to provide a continuous strip of game refuges through the State.

Beginning at a point on the Mohawk Trail in northern Massachusetts, the parkway would extend north along the Hoosac Range through the broken hills of the high plateau country with an enlarged right-of-way to take advantage of Lake Woodford, thence extending northward through the southern section of the Green Mountains to and through the Green Mountain National Forest. It would then swing to the east along the flanks of the eastern foothills to the slopes of Salt Ash Mountain, just beyond which it would enter the first of the larger wilderness areas to be included in an expanded right-of-way. This area would contain the mountains of Shrewsbury, Big and Little Killington, Mendon, Big and Little Pico, said to be one of the most interesting mountain groups in the State. At Mount Killington the parkway would reach its highest elevation.

From this group of mountains, the road would cross the Rutland-White River Junction highway about a quarter of a mile below the famous Long Trail Lodge and wind among the peaks and valleys north of Sherburne Pass. Here another wilderness area is provided for by an expanded right-of-way with foot trails connecting with the summits of Mt. Carmel, Bloodroot, Goshen, Mt. Horrid, White Rock and Romance. Near Romance Mountain the parkway would enter the Battell Forest near Middlebury, a tract of some 30,000 acres of primeval forest which has been under protection for many years. Continuing northward the route would leave the main range of the Green Mountains and extend for seventy-five miles among the foothills in order to obtain the finest views of the Presidential and other ranges. Returning to the main range south of Laraway Mountain in the town of Belvidere, the parkway would extend through Hazens Notch to its northern terminus in a wilderness park of some 20,000 acres in the Jay group of mountains. This region, according to the report, is one of the wildest and most unspoiled sections of the Green Mountains and with its adjacent Canadian Mountain area one of the finest wilderness sections of the East.

"The parkway," the report states, "will thus partake of the character of a great scenic reservation conserving within its area some of the finest natural scenery of Vermont." Its entire length would approximate 260 miles. Plans call for the building of the roadway according to modern principles of landscape design and engineering practice. It would be paved and free from grade crossings of existing highways and railroads. Advertising signs, telephone poles, gas stations, and refreshment stands would be barred, as would commercial trucks. In no case, it is stated, has location of the roadway been accepted where construction would scar or deface hillsides or mountain slopes, or destroy existing scenery.

"The proposed Green Mountain Parkway," the report states, "is not an isolated project, but has a definite relation in the National Park program of the National Park Service. The Green Mountain Parkway will connect with a similar proposed parkway across the State of Massachusetts, which in turn will connect with the existing scenic highway known as the Mohawk Trail and with the Tri-State Park and the Eastern States Parkway System in New York State. With the completion of these units there will exist direct scenic routes from the metropolitan areas of Boston and New York to the Green Mountains of Vermont, and with the highways leading to the White Mountains of New Hampshire, the recreational regions of Maine and the Adirondack and lake regions of Vermont and New York."

Estimated cost of the undertaking is placed at $15,000,000, not including cost of the land, which the state would be expected to provide. At the National Park Service it was stated that the project is considered a desirable one if the Federal Government desires to include the construction of a system of parkways in its public works program.

LUMBER ASSOCIATION TO REORGANIZE

Plans are being made to reconstitute the National Lumber Manufacturers Association as a federation of regional associations. This was the original basis of the organization and one upon which it served the lumber industry for a long period of years. The board of directors of the Association, meeting in Chicago in early December in conference with representatives of regional groups, decided to take steps to return the Association to its original status.

The reconstituted organization has been submitted to regional associations of the industry for their approval during the winter. If the plan is generally endorsed by the regional organizations it will become effective following the annual meeting of the National Lumber Manufacturers Association next April.

The organizations which are expected to make up the regional members of the National Lumber Manufacturers Association under the proposed plan of reconstitution and their respective representatives on the board of directors include the following:

California Redwood Association, two; Hardwood Manufacturers' Institute, four; Northern Hemlock and Hardwood Manufacturers' Association, two; Northern Pine Manufacturers' Association, one; Southern Cypress Manufacturers' Association, one; Southern Pine Association, six; West Coast Lumbermen's Association, six; Western Pine Association, five; Appalachian Hardwood Manufacturers (Inc.), two; Maple Flooring Manufacturers' Association, one; Northeastern Lumber Manufacturers' Association, one; National Oak Flooring Manufacturers' Association, one; American Walnut Manufacturers' Association, one; Indiana Hardwood Lumbermen's Association, one; and Red Cedar Shingle Bureau, one.

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Use Your Head

A woodpecker pecks out a great many specks
Of sawdust when building a hut;
He works like a nigger to make the hole bigger—
He's sore if his cutter won't cut.
He don't bother with plans of cheap artisans,
But there's one thing can rightly be said:
The whole excavation has this explanation—
He builds it by using his head.
—*The Makiling Echo.*

Let Us Pray * *

"Now, children, we have heard all about the duties of the senators and congressmen. Johnny, can you tell us the duties of the chaplain?"

"Please, teacher, the chaplain looks the senators all over and then prays for the country."

I'll Have Sardines

Friend: "Did you fish with flies?"

Returning Camper: "Fish with them? We fished with them, camped with them, ate with them and slept with them."
—*American Boy.*

A Close-Up

First Dumb Hunter: "How do you detect an elephant?"

Guide: "You smell a faint odor of peanuts on his breath."

At the Christmas Tree

"I wonder how they scratched up so many presents."

"With Santa Claws, I suppose."
—*Kablegram.*

Failed to Heed Danger Sign

"What's happened, George?" she asked her husband, who had got out of the car to investigate.

"Puncture," he said briefly.

"You ought to have been on the lookout for this," was the helpful remark. "You remember the guide warned you there was a fork in the road."—*Tit-Bits.*

Indigestion

"Dear Doctor: My pet billy goat is seriously ill from eating a complete leather-bound set of Shakespeare. What do you prescribe?"

Answer: "Am sending *Literary Digest* by return mail."

Comfort First

First Tramp: "What would you do if you won the first prize in the big sweepstakes?"

Second Tramp: "I'd have the blinkin park benches upholstered."

Christmas Tragedy

"December 25—Got gun for Christmas."

"December 26—Snowin'. Can't go huntin'."

"December 27—Still snowin'. Can't go huntin'."

"December 28—Still snowin'. Shot Grammaw!"
—*Drexerd.*

Soil Erosion Control in Thirty-One States

Thirty-two erosion control projects, scattered over thirty-one states and covering approximately 27,300,000 acres of land are in active operation under the Soil Erosion Service. According to Director H. H. Bennett, this represents the most comprehensive campaign ever undertaken to protect and conserve the nation's most basic natural resource.

Of the $20,000,000 allocated to the Service by the Public Works Administration the close of 1934 saw $12,827,000 allotted to the various projects now in existence, $910,000 had been tentatively earmarked for proposed projects awaiting approval and $6,263,000 was in reserve. Fifty-one E.C.W. camps with approximately 11,000 C.C.C. men had been assigned to the Service and 4,129 additional persons were directly employed. The monthly payroll for all erosion control employees, exclusive of C.C.C. workers, but including their personnel, approximates $500,000.

Farm Bureau Favors Unified Federal Program of Land Use

At its sixteenth annual meeting held at Nashville, Tennessee, December 12, the American Farm Bureau Federation reiterated by resolution its position that federal activities dealing with organic land resources should be unified in the Department of Agriculture and that that department should be the sole administrative agency in carrying out the Federal Government's program in this field.

After declaring that agriculture in the United States has suffered as a result of fragmentary land utilization policy, the resolution declares that The Farm Bureau Federation favors "the adoption by the Government of a formulated policy of land utilization in the United States to the end that all land shall be tested in terms of the general welfare rather than in those of private advantage." A policy of correct utilization of land, the resolution states, can best be instituted by a program which will withdraw from cultivation certain lands now in use and which will at the same time offer better economic protection to lands continued in cultivation.

The resolution then asserts "that all public interests in private lands acquired by the Federal Government under this program be under a single system of public administration and regulation devised by a single agency; that this agency be the United States Department of Agriculture; that to make the United States Department of Agriculture the sole administrative agency in this federal program there be effected the following changes:

"Transfer of all public lands to the United States Department of Agriculture; transfer of Bureau of Reclamation from United States Department of Interior to United States Department of Agriculture; transfer of Bureau of Erosion from Interior to Agriculture; enlargement of the Forest Service as an indispensable sub-agency in making a land utilization policy effective; vesting in the United States Department of Agriculture the sole authority for issuance of grazing permits; transfer of the Public Domain from the Interior to Agriculture; that in the maintenance and control of these lands, under the Department of Agriculaure there be utilized the services of the Land Grant Colleges, the Extension Service, and similar agencies."

The resolution further urges that taxation be considered in reference to lands withdrawn from cultivation in order that taxes may not be inviolate in counties, townships and other areas where large acreages may be acquired by the Government.

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Conservation Calendar in Congress

Published monthly while Congress is in session as a service to the members of The American Forestry Association. This calendar contains important bills introduced in the First Session of the Seventy-fourth Congress between January 3 and January 10. All bills introduced during the Seventy-third Congress are dead and must be re-introduced for consideration.

NATIONAL FORESTS

S. 452—McNARY—(H. R. 1998—PIERCE—To Public Lands January 3). To extend the Forest Exchange Act to lands adjacent to the National Forests in Oregon. To Public Lands and Surveys January 7.

S. 463—McNARY—To facilitate the use and occupancy of National Forest lands for residence, recreation and education. To Agriculture and Forestry January 7.

H. R. 37—MARTIN of Colorado—To extend the Forest Exchange Act to lands adjacent to the National Forests in Colorado. To Public Lands January 3.

H. R. 1418—MOTT—(S. 462—McNARY—To Agriculture and Forestry January 7.) To authorize an extension of the Forest Exchange Act and addition of public lands to Willamette National Forest. To Agriculture January 3.

H. R. 2770—ENGLEBRIGHT—To enable the Secretary of Agriculture to control emergency insect infestation on the National Forests. To Agriculture January 3.

H. R. 2873—WHITE—(H. R. 2881—BUCK)—(S. 424—PITTMAN—To Public Lands and Surveys January 7.) Authorizing the adjustment of existing contracts for the sale of timber on the National Forests. To Public Lands January 4.

H. R. 2767—ENGLEBRIGHT—Authorizing $4,500,000 for construction and maintenance of improvements to protect National Forests from fire. To Agriculture January 3.

NATIONAL PARKS

S. 739—WAGNER—Establishing a National Monument at Fort Stanwix, New York. To Public Lands and Surveys January 10.

H. R. 27—KENNEY—To provide for the establishment of a National Monument on the site of Camp Merritt, New Jersey. To Public Lands January 3.

H. R. 58—TARVER—To create a National Memorial Park at New Echota, Georgia. To Public Lands January 3.

H. R. 59—TARVER—To create a National Memorial Park in the vicinity of Kennesaw Mountain, Georgia. To Military Affairs January 3.

H. R. 89—MEAD—(S. 32—COPELAND—To Public Lands and Surveys, January 4.) To create the Saratoga National Historical Park in New York. To Public Lands January 3.

H. R. 87—MAY—To establish the Breaks of the Sandy National Park in Virginia and Kentucky. To Public Lands January 3.

H. R. 2072—TAYLOR of Tennessee—For the acquisition by the United States of the Grand Caverns in Knox County, Tennessee. To Public Lands January 4.

H. R. 1432—CARTWRIGHT—For the utilization of the recreational areas of the United States by a national parkway on a 200 foot right-of-way connecting the National Parks. To Roads January 3.

S. 615—NYE—Restoring, through exchange, certain timberlands to Yosemite National Park. To Public Lands and Surveys January 10.

H. R. 3416—WILCOX—Establishing Fort Caroline National Monument in Duval County, Florida. To Public Lands January 9.

PUBLIC DOMAIN

H. R. 3019—DEROUEN—To amend Sec. 1-3-15 of the Taylor Grazing Act. To Public Lands January 3.

S. 613—THOMAS of Oklahoma—Adding public domain lands in Montana to Rocky Boy Indian Reservation. To Indian Affairs January 10.

WILDLIFE

H. R. 163—DIMOND—Transferring the administration and control of the game and fur-bearing animals of Alaska from the Department of Agriculture to the Territory of Alaska. To Territories January 3.

H. R. 1385—DIMOND—To authorize the entry of fur-farming homesteads in Alaska. To Public Lands January 3.

H. R. 2771—ENGLEBRIGHT—For the destruction and eradication of predatory animals in the State of California. To Agriculture January 3.

H. Res. 44—ROBERTSON—To continue the Committee on Wildlife. Passed January 10.

STATE PARKS

H. R. 1396—LEA of California—Selecting certain islands, rocks and pinnacles in the Pacific Ocean for the California State Park System. To Public Lands January 3.

H. R. 1994—(H. R. 1995 and H. R. 1997)—Selecting certain lands in California for the use of the California State Park System. To Public Lands January 3.

H. R. 2768—ENGLEBRIGHT—To aid in establishing State Parks. Introduced January 3.

FLOOD CONTROL

H. R. 3432—Improvement of Ouachita River. To Rivers and Harbors January 9.

S. 98—SHIPSTEAD—For development of electrical power in the Upper Mississippi Basin. To Agriculture and Forestry January 7.

S. 203—LONERGAN—Survey of Connecticut

River with a view to control of floods and prevention of erosion. To Commerce January 7.

S. 230—LOGAN—To extend provision of the T. V. A. to the Cumberland River. To Agriculture and Forestry.

S. 376—KING—For the control of soil erosion and flood damage originating upon lands within the Uinta and Wasatch National Forests of Utah. To Agriculture January 4.

S. 378—KING—For the protection of watersheds in and adjacent to National Forests. To Public Lands and Surveys January 4.

H. R. 2790—KNUTE HILL—To provide for the improvement and development of the Columbia River Basin. To Irrigation and Reclamation January 4.

H. R. 2053—KNUTSON—To regulate the level of water in certain reservoirs at the headwaters of the Mississippi River. To Rivers and Harbors January 3.

H. R. 3264—SNYDER—Improvement of the Youghiogheny River watershed, Pennsylvania. To Rivers and Harbors January 8.

MISCELLANEOUS

S. 629—McNARY—Acquisition of certain timberlands and sale thereof to Oregon for recreational and scenic purposes. To Public Lands and Surveys January 10.

S. 738—WAGNER—Aiding in, and Transference of land for, providing people of the United States with adequate facilities for park, parkway and recreational area purposes. Introduced January 10.

S. 806—WALSH—(H. R. 3813—DARDEN)—Extending for two years the provisions of the Act of March 31, 1933, creating the C.C.C. To Education and Labor January 10.

S. Con. Res. 3—WAGNER—Creation of a Conservation Week. To Appropriations January 10.

S. 82—GEORGE—(H. R. 60—TARVER—To Public Lands January 3.) For disposal of surplus personal property, including buildings, of the Emergency Conservation Work. To Public Lands and Surveys January 7.

H. R. 1384—DIMOND—To tax certain wood and pulpwood and manufactured products thereof. To Ways and Means January 3.

H. R. 22—FULMER—To establish a reforestation station for pine and other timber in South Carolina. To Agriculture January 3.

H. R. 69—BLAND—To prohibit the importation of pulpwood, wood pulp, or any wood susceptible of use in manufacturing paper. Introduced January 3.

H. R. 189—BROWN—(S. 669—FLETCHER)—To authorize loans to forest industries. To Banking and Currency January 3.

H. R. 1417—MOTT—(S. 454—McNARY—To Public Lands and Surveys January 7.) To amend the act authorizing the taxing of O. & C. lands in Oregon. To Public Lands January 3.

S. 510—STEIWER—Authorizing and directing Secretary of Agriculture to investigate all phases of taxation in relation to agriculture. To Agriculture and Forestry January 7.

H. R. 3270—RANDOLPH—Appropriations for the relief of unemployment through the performance of useful public work on land under the Forest Service. To Agriculture January 9.

Enlargement of C. C. C. Planned

As this issue goes to press reports are current in Washington that Congress will be asked to enlarge the Civilian Conservation Corps to at least twice its present strength. Bills have already been introduced in both houses of Congress for the continuation of the Corps for two years from March 31, when the present term expires.

The Corps now has an enrollment of approximately 370,000 young men, war veterans and Indians in 1,738 camps. Congress will be asked, it is reported, to increase its strength anywhere from 740,000 to 1,000,000 men. The ultimate figure will, no doubt, be decided by President Roosevelt.

Funds to finance the expansion will be allotted from the $4,000,000,000 works program recommended by the President, it was said. More than $550,000,000 has been appropriated to the Civilian Conservation Corps during the twenty months of its existence. It is said that its allotment for the twelve months beginning April 1 may exceed $700,000,000.

It was also stated that the age limit for appointments will be raised from twenty-five to thirty years or more where the so-called "junior" members of the Corps are concerned. There is no age limit for the war veterans and Indians enrolled. The base pay of thirty dollars a month will probably remain unchanged, it was reported. Nor is any change contemplated in the pay of supervisors, which now ranges from $100 to $250 a month.

Senator Walsh, of Massachusetts, and Representative Darden, of Virginia, introduced the bills in Congress to continue the C.C.C. for two more years. Representative Darden is reported to have predicted that the Corps would be at least doubled in strength.

In line with this trend, the work program of the C.C.C. will be greatly expanded.

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FORESTRY IN CONGRESS

By G. H. Collingwood

Scarcely were the newly elected members of the Seventy-Fourth Congress sworn in and the leaders chosen when over 2,000 bills were thrown into the legislative hopper. Within a week sixty separate bills dealing with forestry and conservation had been introduced, among them, one by Senator Walsh of Massachusetts, to continue the Civilian Conservation Corps for two years, and another to permit the Reconstruction Finance Corporation to make loans to forest industries, introduced in the Senate by Senator Fletcher of Florida, Chairman of the Committee on Banking and Currency and in the House by Representatives Brown of Michigan and Caldwell of Florida.

Some inkling of the President's plan for continuing the conservation activities and for the use of a portion of the $3,900,000,000 which he has asked Congress to appropriate "in one sum, subject to allocation by the Executive principally for giving work to those unemployed on the relief rolls," is found in his message of January 4. Here he visions: "the reforestation of the great watersheds of the nation;*** and an intensified program to prevent soil erosion and to reclaim blighted areas." Among the many other lines of work "which the nation needs and cannot afford to neglect," plans are understood to have been completed for continuation of an extensive campaign to control white pine blister rust, to develop protective improvements on State as well as National Forests and National Parks, and for expanding the program of forest acquisition to include aid for the purchase of State Forests.

The President proposes—"the extension and enlargement of the effective work of the Civilian Conservation Corps," but beyond that gives no indication as to how it may be continued after March 31, when the present act expires. Congress will probably pass the necessary authorization and arrange to finance future work from allotments from the lump sum requested by the President. Current expenses for maintaining the Corps are expected to reach $402,363,000, while those of the past year were $331,940,841.40.

In comparison with these sums, budget estimates amounting to $65,089,000 for the Department of Agriculture for 1936 and $67,127,500 for the Department of the Interior, although larger than for the current year, seem surprisingly moderate. Part of the increase to these departments, as to all other government work, is due to the avowed intention of restoring the full salaries of all government employees by July 1, 1935, and part to the responsibility of maintaining improvements constructed with P.W.A. funds, the C.C.C. and relief labor.

A partial break-down of the Department of Agriculture figures shows an estimate of $11,520,676 for the Forest Service as compared with the current year's appropriation of $8,394,323. This is exclusive of forest highways and includes no estimate for the purchase of forest lands. It is assumed that forest purchases will be continued with funds to be allotted from emergency sources. Similarly, $129,703 is set up for the nation-wide forest survey which is now being financed with emergency funds.

A new item of $200,000 for code compliance inspection is included to finance the corps of foresters now being assembled with emergency funds. They will cooperate with officers of the Lumber Code Authority to acquaint timberland owners of their responsibilities under Article X of the Lumber Code and help in establishing forest management upon their lands. Preparation of recommended changes in the code for better protection of the public interest is also contemplated. This is a major feature in the proposed Federal aid in directing the conservation phases of the Lumber Code.

Forest fire protection in cooperation with state organizations is increased to $1,578,632. This is only slightly larger than the amount which became actually available to the states during the current year, after the addition of a deficiency appropriation of $225,000 which this Association helped secure. Even with help from the Civilian Conservation Corps in suppressing and preventing forest fires on state and privately owned lands, there is real need for a larger allotment. Last fall at a hearing before the Budget Bureau, representatives of The American Forestry Association urged the inclusion of $2,500,000 as authorized in the Clarke-McNary Act.

Forest planting on National Forests is increased by $235,746 to reach $400,000 as authorized in the Knutson-Vandenburg Act of June 9, 1930. Assuming that under the most efficient administration this may provide for the planting of 80,000 to 100,000 acres of denuded forest land now in Federal ownership the amount falls far short of the responsibilities placed on the Government by the greatly expanded forest purchase program.

The small increases authorized in the research program do not meet the goals set in the McNary-Sweeney Act of 1928 but some degree of satisfaction can be taken because $1,775,942 is added to the general expenses for protection and administration of the National Forests.

The Bureau of Entomology and Plant Quarantine has received an increase of $1,343,400, bringing the total estimate for that Bureau to $4,729,921. White pine blister rust control, which was left out of the current year's appropriation bill, is restored with a total of $250,000. This is less than was appropriated in 1933 and is inadequate for the program of the past year. It will barely maintain a staff of technical advisers and clerical help with which to administer larger sums such as may be expected from emergency appropriations. Blister rust control during the past season involved the expenditure of over $1,000,000 from emergency sources in freeing over 3,000,000 acres of white pine land from currant and gooseberry bushes. Similarly, only $261,156 is allotted to the control of the Dutch elm disease. Fortunately, this sum is *"to be immediately available"* upon passage of the Act. Meanwhile, the $527,000 recently made available for this work will be exhausted by May 15. A large increase to the budget estimate or a new allotment of emergency funds will be necessary to carry the campaign to completion. The control of gypsy and brown tail moths in the northeastern states is also restored with an estimated appropriation of $400,000. During the past year this work was conducted with $360,000 from Public Works. For the control of other forest insects $159,015 is included.

The work of the Biological Survey is budgeted at $1,140,184, which compares favorably with the current year's appropriation, but represents a cut of over thirty per cent below

the appropriation for the year ending June 30, 1934. In addition, however, the Biological Survey is credited with probable receipts of $750,000 from the sale of the "Duck Stamps" with which to administer existing laws for the conservation of migratory birds. Present indications, based on the past year's sales, are that this will not exceed $550,000.

Farm forestry extension work, which during the current year received $51,354, is estimated at $56,838. This contemplates no changes as compared with the past two years.

For the new Division of Grazing Control, the budget recommends $250,000, and for the National Park Service, including administration of the public buildings and public grounds of the District of Columbia, $15,758,530 or an increase of $4,170,297. Most of this increase is an additional $2,500,000 for roads in National Parks and Monuments, a small amount to meet the increased cost of operating the National Parks and Monuments because of the increased number of visitors, and additions to apply to the operation and maintenance of public buildings with which the Service is charged.

The estimate for administering and protecting the forests and grazing within the Bureau of Indian Affairs is increased by nearly $100,000 to a total of $395,000.

The General Land Office has been given a sharp increase of $696,456 bringing the total to $1,573,700. The largest increase is $408,556 for surveying the public lands, replacing in part Public Works funds now available for this purpose.

A budget of $200,000 for forestry work with the Tennessee Valley Authority is recommended. This includes $53,000 for soil erosion control, planting and reforestation; $60,000 for the classification of forest lands; $40,000 for two nurseries; and $15,000 for experiments in the development of the crops within the Valley.

The Bureau of Fisheries in the Department of Commerce is recommended for a net increase of $39,559 bringing the total appropriation for that bureau to $1,466,975. Included in the increase is $17,786 to operate additional fish hatcheries constructed with emergency funds, and small additions for administering the Upper Mississippi Fish Refuge and enforcing the Black Bass Law.

These budget estimates give no assurance of appropriations by Congress, but are the basis for hearings before Departmental Subcommittees of the Appropriations Committee. The Subcommittee on Agricultural Appropriations began hearings in January. Representative John N. Sandlin of Louisiana continues Chairman of this Subcommittee, which now consists of Representatives Clarence Cannon of Missouri, Lloyd Thurston of Iowa, Malcolm C. Tarver of Georgia, William B. Umstead of North Carolina, William B. Thom of Ohio and John T. Bukbee of Illinois. The bill will not be introduced in the House or given a number until the completion of the hearings. Final disposition of the bill on the floor of the House will be followed by its presentation to the Senate with hearings before the Senate Subcommittee on Agricultural Appropriations. In all probability this subcommittee will be similar to that of last year and will include Senators Richard B. Russell, Jr., of Georgia, Carl Hayden of Arizona, Royal S. Copeland of New York, Millard Tydings of Maryland, John H. Bankhead of New Hampshire, Gerald P. Nye of North Dakota, Peter Norbeck of South Dakota and L. J. Dickinson of Iowa. Appropriations for the Forest Service, the Biological Survey and the Bureau of Entomology and Plant Quarantine will be considered by these subcommittees. The other bureaus, being parts of other departments, will be handled by other subcommittees, including those of the Departments of the Interior and of Commerce.

Book Reviews

PATIO GARDENS, by Helen M. Fox. The Macmillan Company, New York City. 228 pages —illustrated. Price $2.50.

This book tells the story of the gardens of Spain—both old and new—describing their unique characteristics and distinct charm. Though originating in ancient Egypt and Persia, the garden styled with patios, fountains, tiled floors and motifs of Spain, designed for use in very dry regions and hot climates, may be adapted to gardens of the New World, with their far differing demands of climate and taste.

The text, whether designedly or not, will lure the garden lover to introduce a touch of Spain into his own garden—whether it be in a city courtyard or on the edge of a desert, in a rural suburb or high in the air on the terrace of a skyscraper penthouse. And the authentic and delightful drawings by Ralph Reaser—pictures and plans of patios, pools, pottery, stairways, balconies and fountains—will guide and further inspire the garden creator of today in his practical application of a garden art of long ago.—L. M. C.

PLANT PROPAGATION, by Alfred C. Hottes. Published by DeLaMare Garden Books, 448 West 37th Street, New York City. 209 pages. Price $2.00.

Under the sub-title "999 Questions Answered" Alfred C. Hottes, Associate Editor of *Better Homes and Gardens*, presents technical material in popular language to answer the questions of amateur gardeners and professional plant propagators.

Under the heading "Trees and Shrubs" one finds answers to such questions as, "How are trees and shrubs raised from seed?" "How many trees can be raised from a bushel of seed?" and "How is damping-off prevented?"

Grafting-budding-inarching is discussed in another chapter; plant breeding in another; and under the title "Conifers and Evergreens" paragraphs answer "Which conifers can be raised from seeds?" "How are the seeds collected?" "Is shade needed for the seedlings?" and "What are the main reasons for failure with evergreens from seed?"

Line drawings and half-tones ably supplement the text. This is a little book of universal value, designed particularly for amateurs.—G. H. C.

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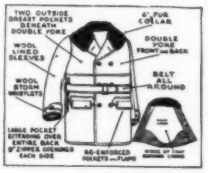
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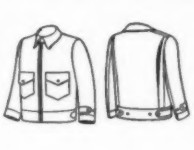

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PRESIDENT LIGHTS NEW NATIONAL CHRISTMAS TREE

Before a distinguished gathering of the nation's leaders, President Franklin D. Roosevelt, on December 24, lighted the new National Community Christmas Tree, in Washington, with the hope that the "spirit of the Christmas of 1934 would be one of courage and unity." Through such a spirit, he said, lies the way to "greater happiness and well-being."

In the distinguished gathering which assembled around the President were Mrs. Roosevelt, his mother, four of his children, and one grandchild. Secretary of Commerce Daniel C. Roper presided at the ceremony.

The National Community Christmas Tree this year is one of two planted in Lafayette Park late this fall. The other tree will be

Underwood & Underwood

The Nation's Christmas Tree

More than 10,000 people assembled in Lafayette Park, the site of the new tree, to witness the President signal to the nation the official beginning of the Christmas observance. Millions heard his message by means of a nation-wide radio hook-up.

The year of 1934, the President said, has witnessed the fulfillment of many things that a year ago were only hopes. "This year we are entitled to new hopes and new anticipations," which, he said, may be fulfilled by a united people working in a spirit of unity.

used next year. Both trees are firs, about thirty feet in height, and replace the spruce in Sherman Square which has served the nation at Christmas since 1925.

The National Community Christmas Tree and the Christmas Eve celebration are sponsored by the Community Center Department of the District of Columbia Public Schools, The American Forestry Association, and the Office of the National Capital Parks of the Department of the Interior. The first tree was lighted by President Coolidge in 1925.

WINTER BUDS

(*Continued from page 75*)

growth. In this connection, it is interesting to observe that no amount of unseasonably warm fall weather can succeed in betraying the tightly closed buds into opening. For at least several months, the trees go into a sort of hibernation which can only be broken by artificial means such as treatment with certain gases.

It might be supposed that the buds of all temperate climate trees and shrubs are provided with scales, but this is not universal. The buds of a few species, such as the witch hobble of the north woods, do not have these protecting covers. In this case, the bud is said to be naked and must depend upon the outer pair of tightly folded leaves for protection against loss of moisture and cold. This gives us a clue to the probable origin of bud scales. And during the spring season the opening buds of many trees show successive stages in the evolution of leaf to bud scale.

Some species show two distinct sizes of buds on the same twig—the larger called flower buds and often containing miniature flower clusters. Also on certain trees the end buds are larger and more conspicuous than the side or lateral buds, and are called terminal since they cap the season's growth.

Where the leaf buds are all of about the same size, the one at the end of the twig is often referred to as a "false terminal." This is because the slender, growing portion of the twig extended during the warm season beyond this bud, but later died and sloughed off, leaving the last formed side bud in a more or less terminal position. True terminal buds are found in such trees as the oak, hickory, ash, tulip, poplar, and maple, while false terminals are typical of birch, elm, hornbeam, hackberry, and others.

THE TREE OF THE AGES

(*Continued from page* 58)

colossus like El Tule and an ordinary tree, because the rings grow progressively finer with advancing age; in youth, the rings are fairly widely spaced. In the case of Tule, the rings of the last few centuries would probably be microscopic.

El Tule belongs to a genera of trees which is widely distributed. One member of the family has taken root in the great swamps of Louisiana, and is known generally as the Louisiana cypress. But El Tule's species, Taxodium mucronatum, is the only one of the genera which is found in Mexico; there is another Taxodium in Asia and a fourth in South America. The mighty cypresses which grow in Chapultepec Park, Mexico City, are of the same species as El Tule. In that neighborhood, however, they are generally known by the Aztec name, ahuehuete.

One of the astonishing features about the giant ahuehuetes of Mexico is their endurance in surviving dry spells. It is noteworthy that at both Oaxaca and Mexico City, the annual dry season is long, lasting from about October to June. When one considers that the cypress has the reputation of drinking water like a sieve, one is at a loss to understand how it can survive seven rainless months every year.

I have it from Mr. Henry Teuscher, dendrologist, that the cypress' reputation as a water hog is ill-founded, that the tree can hold its own under any ordinary conditions. Still, that does not explain El Tule's remarkable freshness in the midst of a long, dry spell, when even the air is parched. The secret of El Tule's lush and youthful green was bared recently when a study by Professor Conzatti established that the sub-soil of Santa María del Tule is saturated with ground water whose source is a stream, the Rio Grande del Tule, and its tributaries, flowing only 1,500 feet from the giant ahuehuete. The soil into which El Tule has pushed its roots was deposited by the meanderings of these streamlets.

What profound changes have come over the earth since El Tule first sprang from the sod! Though earthquakes destroyed nearby cities and shook mighty mountains, though bolts of lightning felled trees and homes, though whole tribes have been exterminated by disease and the sword, no harm has come to the charmed life of El Tule. The soul of man can truly find refuge here.

GREEN HIGHWAYS TO RECOVERY

(*Continued from page* 67)

quality that restores ideas, that heals weariness, that resurrects faith.

President Roosevelt has opened the way to green highways by demanding usefulness and permanency in relief enterprises. The Federal Emergency Relief Administration has made it possible for states, counties and municipalities to undertake planting projects with emergency relief funds. Reliable nurseries throughout the country have planting stock available. So it remains only to the communities to initiate and plan the work. This can be done through local groups and civic organizations, through women's clubs, through forestry and conservation groups—through anyone interested in permanent community development and beautification.

The American Forestry Association will gladly furnish any individual, group, or organization with details concerning this project, and will lend its assistance in planning and designing local programs.

ILLICIT TRAFFICKING IN BEAVER

(*Continued from page* 63)

but it was not sufficient. One of the outlaws had traveled through the woods by moonlight to the portage trail, a distance of five miles through dense forest. Here he moved, on moccasined feet, to within fifty feet of the wardens' camp, and there with a stoical resistance, passed the frosty night. It was this rugged resistance and invincible spirit of hard travel that placed the three brothers so far beyond the ken of possible apprehension. When the wardens moved quietly from their camp in the early morning, two eyes, trained to darkness, espied every move.

The collecting of evidence against the outlaws was now the concern of the wardens. As they left their camp, the wardens traveled afoot to the beaver ponds along the streams which emptied into the lake. It was expected that set traps might be discovered, or other marks of activity seen which would indicate that the outlaws were at that time in possession of beaver skins. It was useless to approach the potential offenders without some assurance that they possessed the necessary incriminating evidence. The patrol of the streams, therefore, lasted throughout the day. But toward evening they felt that they had run upon a veritable bonanza of evidence. Two traps were still unsprung on a beaver dam, while a third held a medium sized beaver which had been drowned at the end of a slide-pole. It seemed certain that the outlaws would return sooner or later. Consequently, the wardens decided to alternate shifts and watch continually. One returned to camp to obtain such equipment as would enable them to pass the night; the other settled to his lonely watch.

It was quite dark and intensely cold when the waiting warden heard footsteps. They were too hurried to be those of his companion, he reasoned. Apprehension seized him and he remained stark still. But he was not long in this state, for in an instant the second warden appeared, quite out of breath. He reported that, instead of finding the camping paraphernalia which they had left, there remained in its place about twenty pounds of moose meat and a handful of salt. In the center of the meat was an anonymous note, which read:

"Wardens confiscate camp outfits; so do we."

(*What move did the wardens make? How did they and the State meet this challenge? This will be revealed in Part II in the March issue.*)

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AMERICAN FORESTS Magazine

OUR ATTITUDE TOWARD LAND

(*Continued from page* 55)

research, we are admittedly treading new paths in application. In Europe the orderly use of land has developed in agriculture and forestry on empiric lines with a background of long continued use. The results are startlingly obvious in central and western Europe, even from the car window. These glimpsed landscapes present to the American planner a vivid picture of widespread accomplishment in what for him has been only a vision of things hoped for.

One sees a clean countryside, orderly fields of crops, methodically terraced on sloping ground to prevent erosion; higher up are areas of pasture; then the ordered boundaries of the forest as distinctly graded into compartments as the lower fields, presenting the evidence of long time sustained yield management; and in the higher hills above the limits of crop forestry, the closely compact Alpine species, interspersed with areas devoted to sheep grazing. If the view is from a proper vantage, there are at wide intervals small clusters of substantially built and warmly thatched houses and barns which bespeak neighborliness. There is in these broad landscapes the beauty of a pervading efficiency. This beauty is accentuated by many intimate details, a group of ancient trees, a hedge, a garden of flowers; even the whiteness of the buildings adding its note of charm. These areas are populated by sturdy workers on the farms and in the forests. There is abundant wild life. In the long summers the roads and mountain trails are walking paths for all the people. Here and there some ancient monument or ruined fortress indicates the antiquity of the scene. The land has been tilled, cattle have been grazing, and timber has been cut each year for generations, and will be for generations to come.

It is obvious that we cannot accomplish overnight this long time natural adjustment of population to land, this balance of agricultural production to effective demand, this development of sustained forest industry, and this assurance of rural security. We must in our own way, according to our own needs, and in harmony with our own ideals, develop a working system of conservation and wise use of our natural resources. This is the ideal behind the work of the National Resources Board, of the several state Planning Boards, and the less comprehensive but locally important planning for counties, cities and towns.

Neither by legislative fiat, nor by emotional appeal, can the responsibilities of sustained use be imposed upon land ownership. Our organized society, national, state and local, must intelligently realize its own responsibility if it seeks to impose upon the individual his responsibility to the community. In this new attitude toward land there is the public responsibility to give unimpaired to the future what we receive from the past. This can be accomplished only by a government that will so tax, protect, facilitate and promote the utilization of land, that sustained farm and forest management will be possible, and in the long run profitable, to the owner. The significance of the European attitude toward land lies in the accomplishment of this objective. The continuity of land use is essential to the continuity of our Western culture.

WHO'S WHO

Among the Authors in This Issue

ROBERT B. GOODMAN (*Our Attitude Toward Land*) of Marinette, Wisconsin, is a lumberman and a practical conservationist who has served with the Wisconsin State Conservation Commission. He is one of the foremost thinkers on the subject of forestry and land use in the Lake States, and an accomplished student in the field of practical applied land economics. He was a member of the party of American lumbermen who last July and August visited Germany and Central Europe to study forest management in these countries.

HENRY S. GRAVES (*National Planning in the Conservation of Natural Resources*) is President of The American Forestry Association and Dean of the Yale Forest School. He is a former Chief Forester of the United States and recently served as a member of the Mississippi Valley Committee.

DON GLASSMAN (*The Tree of the Ages*) is a native of Missouri. For the past ten years he has been an active journalist, having worked for newspapers in Cincinnati, Washington, Louisville, and New York. He is a lover of trees, and on a recent trip to Mexico made a special study of *El Arbole del Tule.*

CALVIN RUTSTRUM (*Illicit Trafficking in Beaver—Part I*) lives in Minneapolis. He finds his greatest interest in criminal investigation work, which frequently takes him into the woods and mountains where he is partner with the Northwest Mounted Police and other police organizations.

C. FRANK BROCKMAN (*Ptarmigan on Mt. Rainier*) is Park Naturalist of Mt. Rainier National Park, Longmire, Washington. He is a frequent contributor to AMERICAN FORESTS.

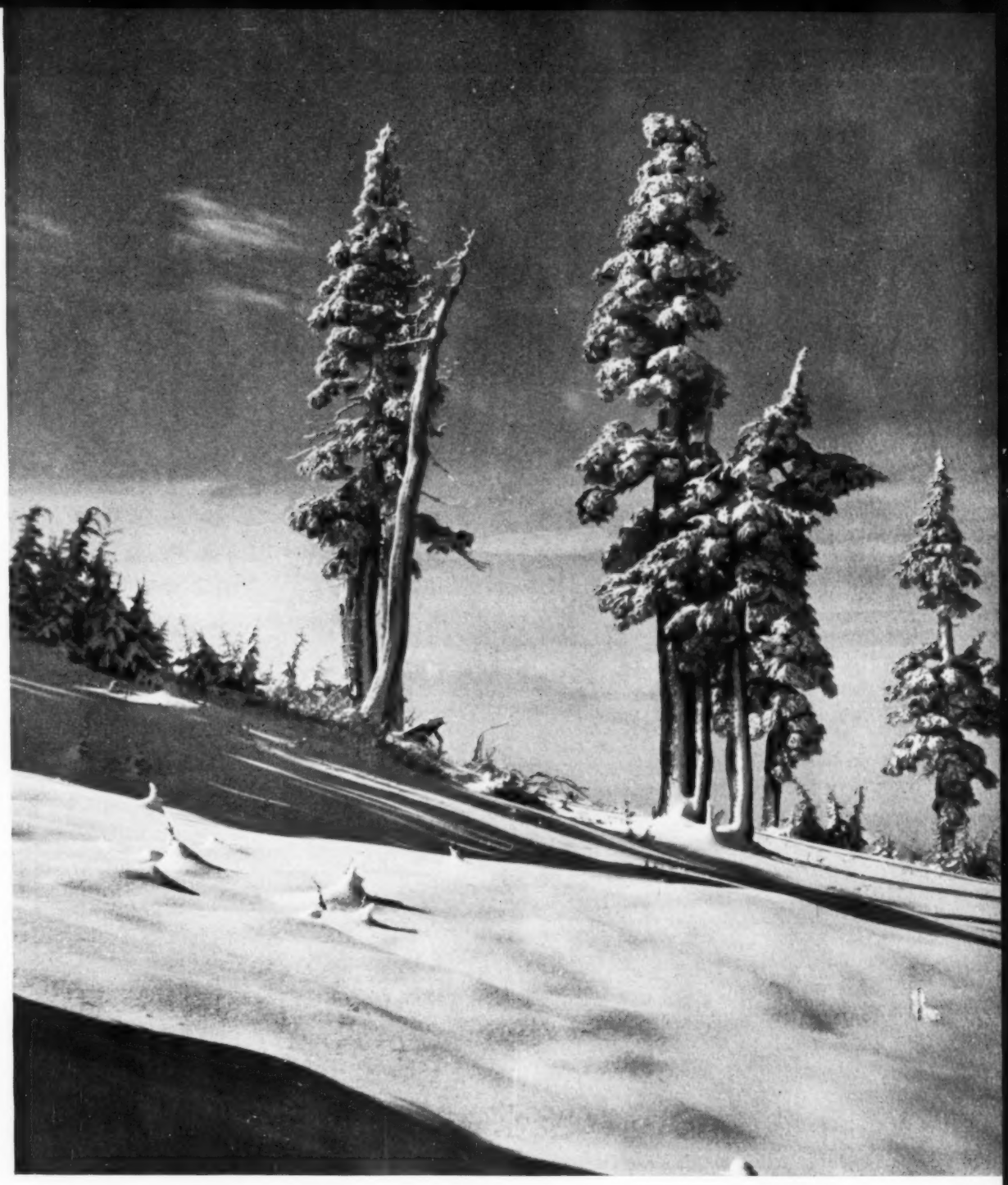
WARD SHEPARD (*Public Control of Destructive Land Use*) is Specialist on Land Policy in the office of Indian Affairs, Department of Interior, Washington, D. C. He recently spent a year in Berlin making a study of German forestry with particular reference to its application to conditions in America.

WILLIAM HARLOW (*Winter Buds—Nature's Answer to Change of Seasons*) is Assistant Professor in the Department of Wood Technology, New York State College of Forestry, Syracuse. He is joint author with Professor E. S. Harrar, of the University of Washington, of a textbook on dendrology for the American Forestry Series now being published by the McGraw-Hill Company.

E. R. NORLING (Cover—"*The Sawyers*") lives in Seattle, Washington. Born in Pasco, Washington, he attended Whitman College, but left before graduation to study at the Chicago Academy of Arts. He intended to become an architect but soon found that his interest lay in sculpture and painting, in which field he is well known today. This painting was one of three done by Mr. Norling under the Public Works of Art Project.

ERLE KAUFFMAN (*Green Highways to Recovery*) is Assistant Editor, AMERICAN FORESTS.

G. H. COLLINGWOOD (*Forestry in Congress*) is Forester of The American Forestry Association.



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